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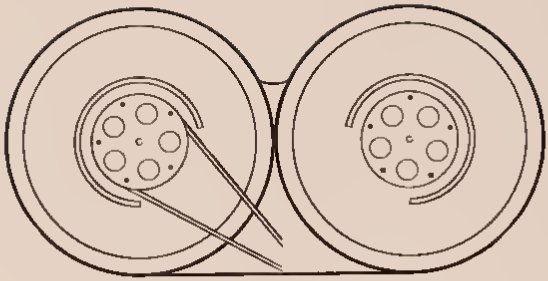
March
1942



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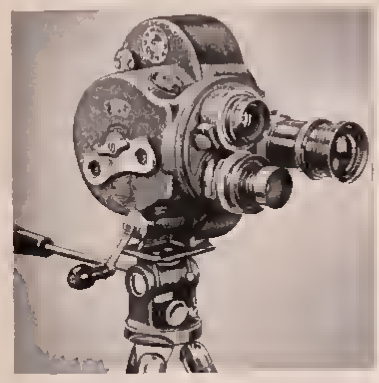

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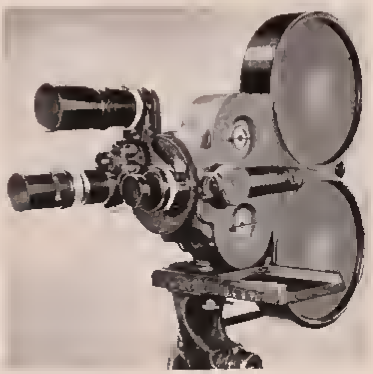

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THE MOTION PICTURE CAMERA MAGAZINE

VOL. 23 MARCH, 1942 NO. 3

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The Front Cover

This month's cover shows Edward Cronjager, A S C, Technicoloring a scene for Twentieth Century-Fox's story of the U. S Marine Corps—"To the Shores of Tripoli"—at the San Diego Marine Corps Base Photo by Milton Gold

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DOCUMENTARY FILMS IN WARTIME

By JOHN GRIERSON

Film Commissioner of the
Canadian National Film Board

LONG ago the documentary film set itself the not very popular task of talking about facts when people were more interested in illusions; of describing social problems which were embarrassing to some and ugly to many; of keeping men's consciences just a little closer to the dreadful grindstone of actuality

At this time we are all, in one way or another, concerned in the high duty of creating and maintaining the morale which is necessary for a hard and absolute war We are concerned with that most vital of all defenses in depth: the strong spirit of the people and their will to order and sacrifice In that work it is not a question of which is lesser or greater to lighten men's hearts with comedy or to hold them to the sticking point with films of more serious content Both are necessary. I was reminded of this the other day by a story which came over from Mr. Brendon Bracken, the Minister of Information in England. It seems that when the Soviet War Delegation visited London, they asked Mr. Bracken if they might see a film; and Mr. Bracken said he would be very pleased, and he had some very nice documentaries to show them. The Soviet spokesman said, "Thank you very much —and he was sure the documentaries were very nice indeed, but, if Mr. Bracken didn't mind, the one film on earth his warriors wanted to see was Mr. Chaplin's "Dictator." So they sat down and without understanding a word, laughed all the way through THREE non-stop showings of Mr. Chaplin's "Dictator"

Today's war tasks take us away from our peace-time concern with sociological problems. They are more immediate and more urgent We are concerned with reporting the battle fronts We have the duty of keeping the people in touch with their men on distant battlefields, on the high seas and in the air. Because authenticity has always been our watchword, we cannot avoid its more dangerous implications now. Already some of us know the responsibility of sending our camera-crews into danger and losing our people; and among the warring nations scores of cameramen have already died in the line of duty In that record of bravery Germans, the Russians and the Australians have been particularly honorable Wherever, in all the elements, there has been front line fighting, their cameras have been up

We have the more difficult duty—the most difficult of all from a mental point of view—of shaping from our war observations on every front—both military and civilian—the strategic pattern of highly complex events: of helping the people to a broad and simple understanding of what is happening,—of where they fit in,—of what in duty is expected of them Nothing is so certain as that men cannot give their best if they are bewildered, and particularly so in a democracy, and the greatest, perhaps, of all our film responsibilities is to give people, in simple dramatic patterns of thought and feeling, a sense of the true issues which lie behind the maze of events in this difficult moment of human history Feeling themselves in tune—perhaps inspired—they will the more intensively give of their utmost; and so will we

In this field the best work today is being done, I think, by Louis de Rochemont and Stuart Legg

It would be a poor business, however, if in following the hard and objective patterns of historic events, we forget the simple pattern of human reaction which persists in death and disaster, like seed in the scorched earth. None has kept the humanist record more nobly than Joris Ivens, Herbert Kline and Rey Scott in their war-time descriptions of Spain and Poland and China, and the English School is doing it brilliantly in films like "London Can Take It," "Ordinary People," 'Letters from Home" and "Target for Tonight." The cry of humanity is not, perhaps, the most potent motif in propaganda, nor the most useful, when the new forms of war are calling us to hard and inexorable disciplines of all kinds. But we would be denying our democratic birthright if we ever became so hard that we could not hear it

Lastly, there is a duty which falls on all of this industry alike. It is humble; it is deeply ordinary, it carries no honors with it Theatres will not applaud it; like private soldiering, it will go completely unnoticed But it is none-the-less vital That is the simple duty of helping the country with its every-day chores of war publicity and instruction. We can use the film to help the fighting services in their daily instruction, we can help the thousand and one Civilian Defense Services to a better understanding of their sometimes quite local duties; we can aid industrial morale and speed the organization of new skills in the service of our country. Mr Disney has already given his great talent to such routine affairs as the teaching of gunnery and the encouragement of war savings, and nothing has honored Hollywood more than the willingness of men like Mr. Zanuck, Mr. Ford and Mr Capra to step down from the grandiose preoccupations of major production to perform these simple but necessary jobs

There will be much more of this to do in the future There is a contribution which every kind of film and every kind of technician can make to help everyone—on military and civilian front alike—to do his job just a little bit better, and feel, however obscure he may be, a fighting force in the national effort I hope you will not take it amiss if I say to an industry that has so often sought only the exciting, the meretricious and the spectacular, that this sober and humble and unselfish duty of helping the people, wherever they may be organized, to effective citizenship and good soldiering, will be the best evidence that we have, in all reality, aligned our art with the public purpose and have dedicated it, in all realism, to the pressing needs of our United cause

Excerpts from an address at the Fourteenth Annual Academy Awards Banquet

CHAMPIONS! Arthur Miller, A S C (right), admires Academy Award statuette for year's best black and white cinematography which he has just received from last year's winner George Barnes, A S C Photo by Pat Clark

MILLER, PALMER and RENNAHAN WIN ACADEMY AWARDS FOR 1941

FOR the first time in the history of the Academy Awards, *both* of the two major awards for photography —for achievement in black-and-white and for achievement in color—were won by cinematographers from the same studio For the first time in Academy Award history, a cinematographer who had previously won an Award was privileged to step forward to receive a second "Oscar," And for the first time in Academy Award history, Academy recognition was extended to a 16mm production

Such, from the phototechnical viewpoint, was the story of the Fourteenth Annual Academy Awards The golden statuette symbolizing the tribute of the motion picture industry to the man responsible for the greatest achievement in black-and-white cinematography during the year 1941 went deservedly to Arthur Miller, A S C, for "How Green Was My Valley" The Award for the year's best achievement in color cinematography—for the first time a full-sized statuette, rather than a plaque—was presented jointly to Ernest Palmer, A.S.C, and Ray Rennahan, A.S.C. This award marked Rennahan's second appearance in the winners' circle—the first cinematographer in fourteen years to repeat—as he had received the color award two years ago for his participation in photographing "Gone With The Wind."

The Award for the year's best achievement in special-effects photography and sound was deservedly won by Farciot Edouart, A.S.C, and Gordon Jennings, A S C, for photography, and Louis Mesenkop for sound, for their outstanding work in "I Wanted Wings"

A Special Award was presented to Ray Scott for his achievement in photographing and producing "Ku Kan," the epic film of China's struggle against Japan, which was originally filmed in 16mm Kodachrome, and is now going into national release in 35mm Cinecolor

Never, in the opinion not only of this writer but of a majority of the photographic community, have the industry's premier photographic honors been more fittingly bestowed, nor more deservedly received In some past years some of these awards may have been subject to question (as was the general by-passing of "Citizen Kane" in so many classifications this year) but as regards the current phototechnical awards it can be said without hesitation that against some of the strongest competition in award history, the best men and the best work won out clearly.

It is perhaps sufficient tribute in itself to Miller's achievement in bringing "How Green Was My Valley" to the screen to say that in a year which included such superlative examples of the camera's potentialities as "Citizen Kane," "Sergeant York," "Here Comes Mr. Jordan," "That Hamilton Woman" and "Sundown," to name only a few, that Miller's achievement should be selected by vote of his fellow-cinematographers as the year's best But by way of explanation to those who may not as yet have seen this production, we cannot help quoting from our review of that production, which appeared last month At that time we said (with no intention of being prophetic) "The results of the Academy Award balloting won't be known for another month yet, but Arthur Miller's achievement in bringing this picture to the screen is sure to rank very close to the top in any listing of the best photography of 1941. To our mind, 'How Green Was My Valley' rates as one of the two supreme examples of fine photography in a year which had more than its full share of outstanding camera work

"Miller makes eloquent use of the modern increased-depth technique But he does it without lapsing into the brittle artificiality which has so often accompanied the use of this technique. His scenes have depth—often to a surprising degree—but they also have qualities of 'good photography' which are all too often lost in attaining unusual depth of field. His scenes have depth, yes; but they also have a lifelike roundness, a soft plasticity of image, and a pleasing gradational range which have all too often been sacrificed in pursuit of depth

"Miller's achievement is a great one, though, not simply because of his perfected use of this modern technique, but —and most importantly—because of the sensitive artistry with which his photography is attuned to the many-changing emotional moods of the story. . . . Miller's camera, compositions and lighting follow these moods and enhance them with flawless perfection It is in no way detracting from the powerful story, from John Ford's inspired direction, or from the deeply moving performances of every one of the players to say that without the perfect sincerity of Miller's camera treatment, 'How Green Was My Valley' would not have been the deeply human document it is."

For a good deal longer than the fourteen-year history of the Academy Awards, Arthur Miller has been reckoned as one of the industry's greatest masters of the camera Since the Awards have existed, more than once he has been listed among the nominees, with entries not only in black-and-white, but in Technicolor That he has won this year is a tribute to flawless workmanship That his winning is so universally approved by his fellows is an equal

REPEATER First cinematographer ever to receive two 'Oscars' Ray Rennahan, A S C (right), receives Academy statuette from George Barnes A S C Photo by Pat Clark

tribute to one of the finest gentlemen in the camera profession

The achievement of Ernest Palmer, A S C , and Ray Rennahan, A S C., in capturing first honors in the color division with 'Blood and Sand" is no less significant Not only did their effort prove the outstanding color production of the release season, but it also was what is to date the outstanding achievement of the truly expressive use of color, in which color is used for dramatic as well as realistic effect, not as an "arty" subterfuge, but as legitimately and thoughtfully as lighting and contrast in a monochrome film are keyed to dramatic mood

In reviewing this film, we said, "Ernest Palmer, A S.C , and Ray Rennahan, A S C , have given 'Blood and Sand' a Technicolor mounting which must inevitably rank high among the finest Technicolor achievements 1941 will produce . They have kept reality well to the fore, but have at the same time kept the chromatic key of the picture subtly attuned to the dramatic mood of each scene and sequence And they've done it as naturally and smoothly as a monochrome cinematographer's parallel trick of suiting the visual key of his lighting to coordinate with the dramatic requirements of scene and sequence To this reviewer's mind, it is a technique which must ultimately become as completely a part of good color cinematography as is the use of lighting to create visual moods in monochrome

"In 'Blood and Sand' these two photodramatic techniques are used side by side to impressive effect . Lighting and composition are of the highest order. Merely to single one scene or sequence out for special mention would be to do an injustice to a picture every inch of which seems an exciting example of camera pictorialism. What Palmer and Rennahan have done should be seen —and studied."

The special-effects award to Farciot Edouart, A.S.C., and Gordon Jennings, A S.C., is another example of credit given where credit was most emphatically due. Since this award is given jointly for special effects in both photography and sound, and its selection is participated in by recording engineers and set-designers as well as by cinematographers, we have at times past found some of the selections open to question, in that sound or set-design seemed to govern the choice, virtually to the exclusion of photographic special-effects.

But this year, such is happily not the case We cannot offhand think of a single production which has owed a greater debt to the special-effects specialists Very literally, "I Wanted Wings" could not have been made without the special-effects contributions of Edouart and Jennings Without their achievements, the production would have been technically, economically and physically impossible of filming.

When we reviewed the film, nearly a year ago, we said of the special-effects work "The film owes an incredible part of its success, both technically and dramatically, to the superb process-work of Farciot Edouart, A S C , and his staff That the production is among the best air films ever made stands much to the credit of Edouart and his associates, for in no previous air-film have the resources of modern transparency process-work been so extensively brought into play And a very great part of Edouart's work is based upon the tremendous possibilities stemming from his development of the ultra-powered triple-head process projector Without this, it would have been impossible to get the many long-shots in which the players are seen taking off, flying and stunting in angles which show virtually the entire plane, and convincingly make the plane not merely fly level, but climb, dive and roll—all in angles which give the effect that the camera was flying right alongside, about as near as the plane's own wing-tips To this writer's mind, the amazing scope and flexibility of the transparency-work is perhaps the outstanding single feature of the film The picture could never have been made without Edouart's superlative contribution.

"Gordon Jennings, A S C , is broadly credited with 'Special Photographic Effects,' and he, too, has done a masterful job. 'Special Photographic Effects' covers a wide range of achievements in this case among them are miniatures, matte-shots, and optically-printed composites which very skillfully blend straightforward photography with what this reviewer at least guesses to be animation Again it can be said that the picture could never have been made without the parts that Jennings and his staff contributed."

The Award for Sound Recording went to Jack Whitney of the General Service Studios for the recording of Alexander Korda's "That Hamilton Woman." This marks another Academy Award milestone, for it is, we believe, the first time that honors for sound-recording have gone to a service or rental studio rather than to the sound staff of a major producer-owned plant.

Honors for Art Direction in black-and-white went to Richard Day and Nathan Juran for "How Green Was My Valley," and in color to Cedric Gibbons and Urie McCleary for "Blossoms in the Dust." The newly-established awards for set-decoration in monochrome and color went to the same pictures, with Thomas Little and Edwin B Willis the respective recipients

As has become almost traditional, no Class I (statuette) Award was made for Scientific or Technical Achievement. Two Class II (plaque) Awards were made, and five Class III (honorable mention and certificate) Awards.

The Class II Awards given were in the fields of laboratory practice and sound-recording. The first was presented to the Electrical Research Products Division (ERPI) of Western Electric, for the development of the precision integrating sphere densitometer. The other was awarded to the RCA Manufacturing Company for the design and development of the MI-3043 unidirectional microphone

First of the Class III Technical Awards went to Ray Wilkinson and the Paramount Studio Laboratory for pioneering in the use of, and for the first practical application to release-printing of fine-grain positive stock The second was given to Charles Lootens and the Republic Studio Sound Department for pioneering the use and for the first practical application to motion picture production of Class B push-pull variable-area recording, which as stated in the citation has eliminated distortion introduced by noise-reduction systems and at the same time has reduced film noise by at least 6db

The third of these awards was presented to Wilbur Silvertooth and the Paramount Studio Engineering Department for the design and computation of a relay condenser system applicable to transparency process projection, delivering considerable more usable light By means of this recomputed condenser relay system, a light-source of the same intrinsic intensity and a projection lens of the same speed of previously designed systems will collect and deliver to the

(Continued on Page 128)

CONGRATULATIONS! Left, George Barnes A S C beams as Color Award winners Ray Rennahan A S C, and Ernest Palmer A S C, receive their Awards (Photo by Frank Pawelny) Right Farciot Edouart, A S C, receives Award for year's best special effects cinematography from Col Darryl F Zanuck Photo by Pat Clark

MOVIES REPORT ON DEFENSE PROGRESS

By CARL PRYER, A.S.C.

TODAY, after less than twelve months of actual work, the first production unit of the Office for Emergency Management is currently engaged in putting the finishing touches on production No. 36.

How a small production unit of this kind, which, with one exception, has never consisted of more than five men in the field at one time, could have produced the large number of films at a speed and of the quality which we have, and at the small cost involved, is one of the mysteries of the film trade.

There is no secret about it and certainly no mystery. I believe that our success may be attributed to several factors: first, by applying common sense to all our plans and methods; second, by advance planning and thought; and third, because we are a small congenial group who have learned to work well together, each recognizing and respecting the other's ability and responsibilities and doing our work as well and as quickly as we are able without any more "fuss and feathers" than is necessary.

Our small compact unit consists of a Director of Photography, (myself); an Assistant, Russell S. Anderson; one electrician, James Dolan, and his helper-driver, Richard Collins. Our equipment consists of a Bell & Howell camera of the shift-over model, all the necessary lenses and accessories for which we have any possible need; a turret model Evemo; a station-wagon which carries this equipment and three persons, and a 1½-ton truck which carries our lighting equipment, the driver and electrician.

Since the beginning this single crew has been working on full time with two alternate directors. This arrangement has been one of the reasons for our success. The two directors, George Gercke and Guy Bolté, divide their own time between first, research and writing a working script for the next picture, and second, production. While one is making advance preparations, the crew is working with the other. Thus we are currently shooting "Lake Freighter," a story of the iron ore so necessary to the war effort, conceived and written by Mr. Bolté; and concurrently, George Gercke is putting together on paper the ideas for the next picture, which also has to do with the problems of national defense. In rapid succession Gercke and Bolté have alternated between "Army in Overalls," "Aluminum," "Women in Defense," "Bomber," "America Builds Ships," "Housing for Defense," "Tanks," etc.

So simple and yet so effective is this plan that often the crew, after a thorough preliminary inspection with the Director of the scenes involved, are able to proceed with the work, while the Director is engaged in other and more important details.

All of the pictures produced at this writing have not been released. Some of them are completely cut and edited, awaiting a release-date, while still other material is now in process. The current release, "Women in Defense", is now being shown in 14,000 theatres with 600 release prints.

Two additional and most important factors have made this work possible: first, the overall general supervision of Arch A. Mercey, of the Executive Office of the President, who, until his recent appointment as Deputy Coordinator of Government Films, made all contacts with the Army, Navy, defense plants, and departments of the Government to get clearance for the crew in the field, and who, with his associates, passed on all story material and features of the shooting policy; and secondly, the cutting and editing department in New York under the general supervision of Philip Martin, Jr. Martin has created a very compact and efficient staff of cutters, editors and sound-men, with all necessary cutting-rooms, storage-vaults, projection-rooms, and in fact, all that is necessary to put a picture together. This is one of the most highly efficient units of its kind I have ever seen. All material is delivered direct from the camera to this unit.

The story behind the creation of this film-unit as a whole is, I believe, worth telling.

When the National Defense Advisory Commission was created, the Administration decided—and very wisely I think—that the public in general and the taxpayer in particular, were entitled to know, insofar as it is possible to tell them without revealing actual military secrets, just what was planned and what was being done on the defense program. A Division of Information was set up under the direction of Robert W. Horton, who was drafted from his position as Director of Information for the Maritime Commission, and a far-reaching and broad system of gathering and distributing "news" was set in motion. After consultation with a small group of men—all of whom had, in one connection or another been identified with the old U. S. Film Service (which had produced such epics as "The Plow That Broke The Plains," "The River," and "The Fight for Life" but which had ceased to function when an economy wave "washed out" their budget—it was decided that one of the most effective ways to inform the public in general about anything was through the medium of motion pictures. With this, most of us agree.

I have cast about for a suitable word to describe the films which have resulted. "Documentary," "educational," "teaching," "propaganda," and similar words have been so badly abused and kicked around by one faction or another that they cease to convey the meaning for which they were originally intended. I think the best description of films of this type must be "factual" films. For such they are. They do not reflect or interpret any one's ideas nor do they change the facts in any way, shape, or form, but

they *do* show actualities without fear or favor. Scenes are photographed just as they are found, without "glamorizing" or change No posing, no staging, for the most part catch-as-catch-can, with very little choice of camera angles—such films do in fact present actual records as they are found.

After considerable preliminary discussion, the first film was designed to show the Maritime Commission training program, a subject with which Mr. Horton was thoroughly familiar George Gercke, one of the original Film Service men, called in as Director in charge of production A small (according to Hollywood standards) budget was set up and a very limited shooting-schedule arranged

I was offered the opportunity of doing the camerawork, and although at the time I was engaged under Director Jack Glenn of The March of Time in shooting a story on Mexico, I was most anxious to participate in this new method of film reporting I felt that such films could and should be important contributions to American history and that they could be made to serve a good and useful purpose in informing the American public about things they wanted to and were entitled to know I knew that we would have to start on a very modest scale, but I felt that the importance of the work would soon be recognized and developed to a point where it would be appreciated by the theater-going public and management and the Administration as well.

Director Glenn was most sympathetic and kindly consented to release me from my obligation to The March of Time, with which I had had three years of most enjoyable association. Accordingly, on August 8, 1940, I joined Director Gercke and a ready-made crew at St Petersburg, Florida, where it was proposed to photograph the U S Maritime Commission training ship "Joseph Conrad," a famous old square-rigger which had sailed down the Atlantic coast to meet us at that point, with a crew of trainees. We were also to photograph the larger steam training ship "American Seaman," which puts the finishing touches on some three or four hundred student seamen at a time during a real ocean cruise

Originally, a forty-day shooting schedule had been set up with a very limited budget and the itinerary called for scenes on these two boats, as well as scenes at sea on one of the larger cargo boats such as the "Mormacpen" operated by the Moore-McCormack Steamship Company, the training school on Hoffman Island in New York Bay, and the advanced schools in Boston Harbor and New Haven, Connecticut.

In this instance we had not only the weather to contend with as is usual and expected, but due to causes over which we had no control, we lost ten precious days at the very start. On the way south, the "Joseph Conrad" ran into a storm which carried away all of her canvas so that she arrived in St Petersburg under bare poles. Ten days would elapse before spares could reach her. This was discouraging but not disastrous as we still had the "American Seaman" to fall back on; we decided to reverse our program and shoot the "American Seaman" first, putting out to sea for an offshore cruise where we could picture the student seamen doing their stuff. No sooner planned than—Bang!—out went a generator head on the "Seaman" and she, too, was laid up for at least two weeks before repairs could reach her!

Sadly we contemplated our schedule, and our budget. Nothing remained to do but to reverse our whole plan and start at Hoffman Island in New York Bay and return south when both boats were again in commission. This we did, but it still added up to ten days' lost time

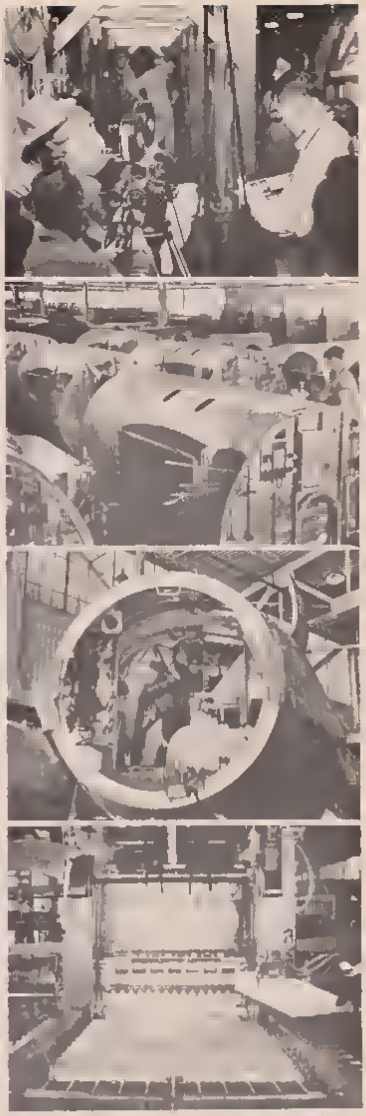
Hoffman Island, a tiny dot of land at the entrance of New York harbor, was used in old days as a quarantine station but in more recent years has been of little value or use. At the beginning of the defense program it was taken over by the Maritime Commission and used as a training station for the Merchant Marine Here a school of great importance has been established for the training of American seamen in all branches The whole program is administered by the U S Coast Guard. It is said that the graduates of this school are snapped up by merchant steamship companies instantly It also provides advanced training for seamen and AB's so that they are able to secure better ratings and pay. No matter what their previous experience, every student is required to take and become proficient in life-saving, the use of life preservers, shooting the Lysle gun, breeches-buoy, etc, training designed to enable them to cope with the present problems of ocean travel This training program provided material for a picturesque and exciting film sequence

Later we transferred to the training school at Gallup's Island in Boston Harbor where advanced radio and electrical instruction is given those already experienced in that work and still later to the school in New London, Connecticut, where only Masters and Mates see advancement.

The whole provided material for a film sequence, both interesting and important

The technical requirements of such a small production unit is rather confusing to those accustomed to Hollywood standards. The first requirement is absolute mobility, to travel quickly and cheaply under any conditions—plane auto, boat (and I mean small boats), train, or what have you Equipment must be reduced to a minimum, both as to camera equipment and lighting equipment for interiors

For this first picture we used an Akeley Camera, and in view of the tough spots and, the speed with which we had to work, it proved an ideal outfit for the job. Our lighting equipment consisted solely of photofloods—No. 4's in reflectors, No- 2's and 2R's in reflectors with clamp bases and, of course, lots of raw bulbs which could be used in fixtures



Top Carl Pryer A.S.C., filming "Bomber" in the Martin Aircraft factory. Below scenes from "Bomber", bottom aluminum rolling mill scene from O E M film "Aluminum" On opposite page Carl Pryer, A S C on location at Langley Field, Va

built into the boats or classrooms DuPont stock was used throughout the job, Type 1 for all exteriors and Type 2 for interiors.

In view of the equipment used and the subjects covered, the results were truly remarkable. The writer, being trained in the old school, was perhaps better acquainted with getting results under poor conditions than the average. Every advantage was taken of natural sources of light. Every outlet for interior light was used even with No. 1 photofloods, and an endeavor was made at all times

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Light test strips from five of Miller's split screen filter tests. Right hand exposure in each is normal unfiltered shot. Tests include (left to right) Aero I, G 15, 29 F, 72, and 23 A-56 combination. Note overexposure in red-filtered tests, made with factory-recommended filter factors.

Filter-Factors For Daytime Night-Effects

By VIRGIL E. MILLER, A.S.C.

WHEN Panchromatic film first came into use, I became a filter-Factor "fan," because it opened up a new field in exterior photography. Orthochromatic negative, being sensitive to the upper or red end of the spectrum, gave us untrue renderings of color-values, the bright end of the spectrum photographed dark; reds were black on the screen, orange and yellow and green took on nightly hues that beautifully camouflaged the true relative brightness of the objects being photographed.

Nearly twenty years ago I made my first experiments with Wratten filters; at that time I made a split-screen test of all the filters then available, not only comparing the unfiltered to the filtered values, but further comparing one filter against the other. I will not go into the fundamentals as we all know then, *i.e.*, a red filter permits the passage of the red rays and stops the blue, etc.—those facts are self-evident to all cameramen. But from the start I found certain limitations being imposed by the use of single filters; I could easily secure "over-corrections," but they weren't believable.

For instance, I was sent out by the Universal Studios to photograph in a night-effect shot, a train of cars crossing the desert country just above Toluca, (later Lankershim and now called North Hollywood). I used my red filter; it turned my sky black, but all my red cars came out white—a ghost train was the result.

Knowing that panchromatic film of that period was almost insensitive to green, I decided that perhaps a red filter plus a light green filter might give me truer renderings of red objects and still give me a black sky and also permit the headlight on the locomotive (or automobile) to register.

I had purchased a book of filters from Howland & Dewey (now Los Angeles' Eastman Kodak Stores) and had one green filter to experiment with on this particular assignment. The test exceeded expectations and those who saw it declared it the nearest to real moonlight they had seen. I exhausted my supply of green gelatin, and could not secure any more in Los Angeles. I ordered three squares (3") at $1.80 per square; with them I received a letter from Dr. C. E. K. Mees, A.S.C., of the Eastman Kodak Company, asking what I intended using them for.

I wrote back, saying that the No. 56 green in combination with the No. 23-A or the No. 25-A gave me very believable "night renditions" in the daytime.

I received a letter saying such a combination would give me nothing on the film, since such a combination was complementary.

I sent Dr. Mees a roll of the film "shot" with the combination; his letter in reply said that they were astounded and that their film was possessed of qualities of which they were unaware, and that he would be on the coast shortly and wanted to talk to me. Needless to say, we met a few weeks later and he commended me very highly for what I had done . . . thusly "combination filters" were "born" twenty years ago.

Down through the years panchromatic film has been improved to the point where it is sensitive to the entire spectrum; in addition, we have our "infra-red" negative that lets us explore the invisible reds and completely eliminates all or most of the shorter wave-lengths. Night-effects are obtainable with this infra-red, but to most of us such effects are so greatly overcorrected that they are often unbelievable. It is for this reason that a truly panchromatic negative yields results more believable and therefore more satisfactory for picture purposes.

Since Twentieth-Century Fox Studios use Eastman negative films exclusively, my recent experiments have been confined solely to that film. The split-screen tests illustrated were made on Plus X, and were made during the noon hour, inasmuch as the light changes vary less during that period. I used Wratten gelatin filters, behind the lens to make them less susceptible to extraneous light. The background remained the same for each half-portion of the frame; I "panned" over to include exactly the same area.

After ascertaining the footage desired for the entire series of tests of filter values, I matted off one-half the aperture and photographed the scene unfiltered, using a meter for determining a printing range suitable for the purpose. I then rewound the film and, using the identical background, immediately photographed about twenty feet with each of the filters used, viz: Aero 1, Aero 2, G or 15, 3N5, 5N5, 21, 25, 29, 72, 23A-56 and 25A-66.

The negative was developed normally and the positive was printed on ONE light, based on the best printing value for the unfiltered side of the negative.

My first test, in which I used the generally accepted filter factors issued by the various film companies, revealed one thing definitely; the factors used for day renderings were approximately accurate, those used for night-effects were much too high. This was evidenced in our running of the film, as it varied in its densities. Had the factors been correct the densities would have varied only slightly.

Please understand that I am not talking now of color-corrections and their variations, but of over-all densities. Factors, as they are called, are primarily useful in securing proper densities; they have nothing to do fundamentally with color-renderings. In other words, a Director of Photography must know what filter to use in order to secure the color rendition he desires; only experience can accurately determine his choice; after that, he should know the factor to be used in order to bring his preconceived color renderings within the scope of the laboratory's printing limits.

Using my first test as a key to factor changes necessary to balance my densities, I shot another test. This second test more nearly fulfilled the requirements for balanced densities. As mentioned, the "day" values were very close to those obtained by using the prescribed factor values; the appended table shows only slight differences. But those factors used for night-effects in my second test show wide variations from those generally recommended, as may be seen in the table.

The following filters are those most used for night-effects,—Numbers 25, 29, 72, 23A-56 and 25A-66. It is this group that I found necessary to alter in factor values in order to give me suitable and believable night-values well within the limits of our laboratory's printing range.

Filter	Commonly Accepted Factor	Recommended Factor
Aero 1	1.25	1.25
Aero 2	1.50	1.50
3N5	4.	4.
5N5	5	5.
G-15	3	2
21	3.5	2.5
25	7.	4.5
29	15.	7.
72	Wide Open	12.
23A-56	7 to 15	5.
25A-66	7 to 15	5.

I have used two combinations above shown; either are very acceptable, but personally I prefer the 25A-66 for this reason; the 25A better corrects for night values and the lighter 66 green retards the heavier red in rendition of face values. Circumstances alter cases and perhaps the 23A and the heavier 56 green may give a little more detail where less sky correction is needed, and face values are not so important.

A further discussion of factors would be only "painting the lily" since cinematographers are well aware of their general uses; a comparison of the illustrations will bear out the general theme of this paper and emphasize the fact that I have tried to bring out, viz.: that there has been a tendency to use factors too high to secure the intended results. END

PLANNING Employee-Training Films For Victory

By W. G. CAMPBELL BOSCO

NOW that America has been brought face-to-face with the reality of war, the industrial motion picture for employee-training (especially in 16mm form) will have an opportunity to come into its rightful heritage as an integral and economic part of modern industry. Properly conceived and efficiently used, the employee-training film can play a vital part in hastening the day of Victory.

The history of the last two years prove, and the words of our national leaders confirm, that success in modern war lies with the side having the biggest capacity to produce the machinery of war. And we know that that being the case, the United States is more than ever invincible because we have the greatest potential industrial force in the world. So the result is not in question. The question is, 'How soon'? And the answer to that is how quickly we convert our vast potential into actuality. Every day gained in making that conversion will mean less sorrow and suffering for some of our fellow men.

The basic ingredient in industry is manpower; the training of that manpower to perform new tasks imposed by a wartime economy is a prime factor in converting into actuality our great potential strength. The use of motion pictures to facilitate and speed the training of men and women for industrial skills has been proved again and again. Leading industrialists have been quick to grasp the possibilities of this powerful new educational medium and they are turning its usefulness into ever more diversified channels. But despite this success, and the endorsement of the army and navy, who are today the largest users of personnel-training films, there are still some employers who have to be "sold."

One way to sell an employer on the advisability of having one, or a series of, training films made is to respectfully bring to his attention the successful use of this medium by others. Don't take for granted that he already knows. Perhaps he doesn't. And if he does he has possibly been too busy and too concerned with what he considers more immediate problems to give the idea proper consideration. Let us remember that if there is one useful thing about war, it is that it does jar us loose from some of our previously set convictions and speed up the use of newer, better and more efficient means of operation.

The enormously successful application of modern methods for selecting, classifying and training personnel used by the suddenly mushroomed aircraft industry, with its resultant publicity, has done a great deal to encourage the average employer to consider the motion picture and other modern methods of employee-training in a more kindly light.

A good training film should make full use of the latest findings in employee psychology, the first rule of which is to make each man or woman realize his or her importance to the work he is doing. When a worker really feels that his contribution is important, his efficiency increases considerably; when, on the other hand, he is allowed to feel that he is just an unimportant cog in a big wheel and he wouldn't be missed anyhow, the reverse is true, that man's efficiency drops way below normal.

Startling and conclusive evidence to support these facts was recently revealed after an extended study in the Hawthorne Plant of the Western Electric Company. There, workers who were made to feel that their work was important and not just run-of-the-mill stuff, responded by increasing their efficiency tremendously and continued to do so even when they were, for the purpose of the study, made to work under what would ordinarily be adverse conditions. Here is a real challenge to the training film producer.

It is a well known fact that the audience of a motion picture puts itself in the place of the characters on the screen. They suffer and triumph with the hero, puzzle out the baffling clues with the invincible detective, and thrill with the ardently wooed heroine (at least I'm told that's the reason for the love scenes!) But the audience only reacts that way when the scene is convincingly done. If it is not, the small boys who always seem to be sitting in the front row have an effective, if unmusical, way of showing their disapproval.

The training-film producer has the same job of making his scene and his characters convincing if his picture is to perform at maximum efficiency. Of course he doesn't have, nor does he need, the background and emotional by-play of the theatrical screen-play. But he does have as a subject something that is more vitally important to his audience than the subject of any other movie they have probably witnessed . . . their job, and the way it should best be performed, by themselves. That is the wedge the training-film producer has into the hearts and minds of his employee or potential employee audience. That puts his foot in the door and gives him a chance to make the most of his sales-talk. If his sales-talk is properly designed it will banish the trainee's indifference or casualness towards his job and will, besides instructing him in correct methods and procedure, make him want to get off the bench and get in there and pitch.

My choice of the term sales-talk is deliberate; it is just that. Personnel directors know that enthusiastic employees are more productive and are less likely to disrupt organization by grievances and job-changing. And they know that an employee can be made more enthusiastic by "selling" him on his job. That does not mean the old fashioned "pep talk," although it still has its place, nor does pointing out the importance of a man's job necessitate a flattering or exaggerated appraisal. It does mean making a man feel that he is a definite and important part of an organization and that the particular function he performs is, along with numerous other functions, a necessary and integral part of the main project.

Men who have studied personnel-training say that employees respond

(Continued on Page 140)

Scattered Light in the Focal Plane

By P. C. SMETHURST

DURING the past few years the production of reflection suppressing layers of metallic fluorides on optical glasses has opened up new possibilities of perfecting the photographic process, and some interesting claims have been made for improved performance when lenses treated with this process are used. It is, however, regrettable that the impression has been given that the lens glass-air surfaces are the sole factor involved in the appearance of scattered light intensities in the focal plane, and the purpose of the present notes is to rectify the position by drawing attention to some of the other important factors involved.

In the first place, it must be clearly realized that the level of illumination in the focal plane which is caused by scattered light is just as dependent on the total light-flux entering the lens as it is on the scattering factor involved in the glasses themselves. If double the total light reaches the lens glasses, then double the scattered light appears in the focal plane, assuming that one particular lens is in use, and it is the relationship between this value for total light-flux entering the lens and the exposure value given in the camera which will determine the maximum range of tones which can be recorded on the film. Putting matters more technically, scattered light level in the focal plane is the sum of all the image-point brightnesses, each multiplied by its particular area, whereas the true image has an illumination level in the focal plane which is (other circumstances remaining equal) proportional to the brightness *only* of each image-point in the subject.

With ordinary photographic subjects, the estimation of brightness area summed up over the entire subject is simplest made by arranging that a photoelectric exposure meter is suitably hooded to cover the field angle of the lens (the latter must be determined from the cut-off effect of the mount and diaphragm, and *not* from the negative area and focal length). Such a meter, when held up to face the subject, will give a reading proportional to $\Sigma B \times A$ over the field covered by the lens, and it is precisely because of this action that the present writer has objected to the use of such meters for the determination of camera exposure. The relationship between a reading of this type and that given by an incident light exposure meter will vary with the subject character, and will always indicate the extent to which scattered light intensity in the focal plane will be present at a given exposure level in the camera.

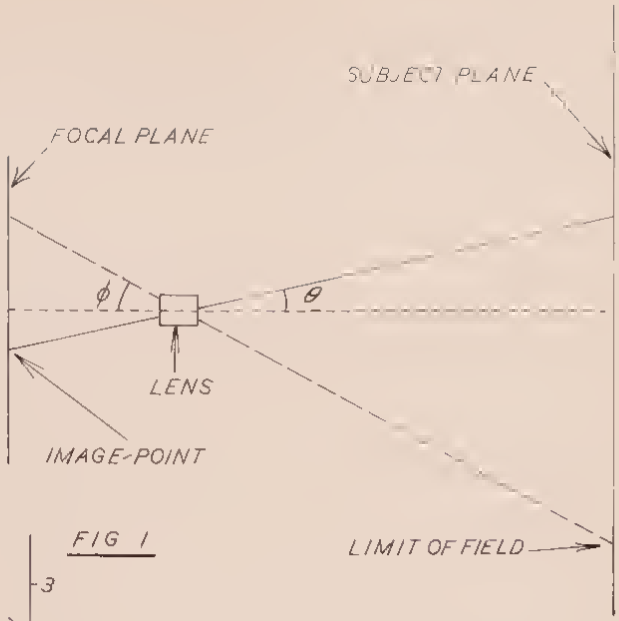

FIG. 1

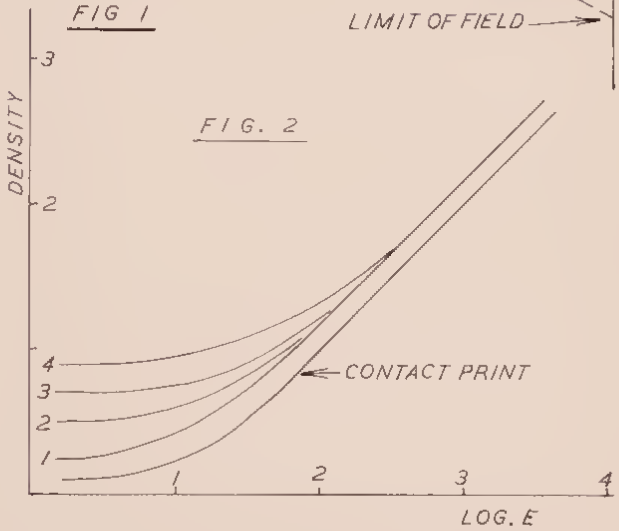

FIG. 2

For a quantitative examination of the relative illumination-levels produced by the true image and the scattered light, however, it is by far the simplest to assume that the subject has one brightness-value only, and extends indefinitely in all directions in front of the camera. Under such circumstances, we can find the minimum illumination in a hypothetical shadow which is formed by the scattered light illumination level, and thus determine the maximum tone range which the lens will transmit under the conditions prescribed. The application of this conventional subject to practical photography will be touched on in a later paragraph. If we take ϕ as the field semi-angle which the lens will cover (irrespective of the negative size used behind it), θ as the angle subtended at the lens by the image-point in consideration to the lens axis, f the usual stop number, and t and s respectively the transmission and scatter factors (in percent terms) of the lens, and if we assume that the light scattered by the lens emerges with equal intensity over the hemisphere behind the rear lens component, it is easy to show that the total illumination at any image-point consists of—

(True image + scattered light)

$$= \frac{B\pi}{4f^2}(t.\cos^4\theta) + \frac{B.\pi}{4f^2}(s.\tfrac{1}{2}\sin^2\phi) \text{ units,}$$

(See fig. 1 illustrating the various symbols involved.)

This expression may be simplified if we take the image-point on the lens axis, since here $\theta = 0$, and $\cos^4\theta = 1$, and if we write a constant $K = B.\pi/4f^2$ (assuming that the stop and brightness values remain constant) at the same

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Wartime Economies By "Pre-Photographing" Scripts

By JACKSON J. ROSE, A.S.C.

SOME people say this present war is a battle between the "have" nations and the "have nots" I don't pretend to know about that, for motion pictures, rather than world economics, are my specialty. But I do know that some of these economists are hitting the nail pretty closely on the head when they say that if our side is to win, we of the fortunate "have" nations must learn how to utilize our resources with maximum efficiency.

One of those resources—and an important one—is the motion picture. Whether you consider it simply as entertainment, or as a builder of morale and a carrier of propaganda, it is an important factor in modern life. And fortunately Hollywood is the world's greatest center of motion picture production.

In one way, though, we can find this a disadvantage. For, taken as a whole, the years have been very good to Hollywood's motion picture industry. Our financial position has been pretty consistently secure. Therefore, most of us have had all too little worrying to do about whether or not corners could be cut to save time, money and effort in making a picture. If the story called for a thing, that was it, and very few questions were asked.

But today we're in a war. That war is making increasing inroads on film production, not only in manpower, but as regards the supplies of the physical necessities of production as well. It's up to us to take every possible short-cut which will enable us to turn out our pictures with greater efficiency.

One of the most constructive steps the industry could take in this direction would be to establish a routine whereby our scripts could be more accurately planned for the camera before shooting starts. The most logical means of achieving this would be to call the man who will photograph that picture into consultation earlier—several weeks before actual shooting starts, so that with his camera minded cooperation, the script could be, so to speak, "pre-photographed" before an inch of film is exposed.

Under the generally used system of cost-accounting, this would probably mean that the Director of Photography's salary would be charged against the production for several weeks longer than is now the case. Yet, far from increasing the cost of the production, this would in ninety-nine cases out of a hundred actually result in decreasing the overall expenses of that production! The cinematographer's salary for the two- or three-week period during which the script gets its final polish, and sets and so on are planned and built, might amount to $1500 or $2000. But during that period, any cinematographer in the industry could take the average script and—simply by eliminating or modifying details of setting or action which aren't usually planned for the camera—eliminate an expense of anywhere from $5000 to $25,000 or more *which never has a chance of reaching the screen!*

The scenes shown may not be actual examples of practices pointed out by Mr. Rose, but they illustrate the point. Note that in left hand shot the large set is not necessarily essential for a two shot such as is being made, and that an equally convincing effect could be gotten over (as right-hand shot) by table, two flats and a few props.

To prove the point, let's take up a few practical examples of savings which could be effected by earlier participation by the cinematographer. Most of them will be recognized as typical incidents which happen every day in any studio—but which don't really need to happen at all.

One of the most prolific sources of waste in production is "overshooting," which means that thousands of feet of film are shot which never have even the remotest chance of getting into the completed release. And one of the commonest sources of this overshooting is in over-length scripts. The writers, presumably intent on assuring the maximum literary perfection for their story, rather naturally develop their scenes and dialog as fully as possible, but often with no thought of screen footage. The directors, intent largely on dramatic values, do their pre-production work on the script with the same attitude.

But when that script reaches the shooting stage, the practical considerations of footage begin to make themselves felt. The average feature production can contain only about 500 camera-scenes, and still be within its allotted release footage. Yet repeatedly we find such films being made from scripts which contain anywhere from a thousand to 2500 script-scenes, each of which is almost inevitably to be broken up into two or more camera-scenes. In all too many instances, those surplus scenes are photographed, for the sets have been built for them, costumes made and players called.

When the film reaches the cutter, what happens? To get his picture trimmed to its release footage, he has to slash ruthlessly. Whole sequences are thrown out bodily. Others are shortened to a brief flash or two of the most significant action. Inevitably this leaves great gaps in continuity. Sometimes these gaps are left as they are, at other times, they are bridged over with expensive "added scenes."

In any event, the net practical result is that a great deal of film, time and effort is wasted, and that often expensive sets are built and photographed which do not reach the screen at all. Much of this wastage could be prevented if the Director of Photography were able to participate actively in the final stages of preparation—if he were there to say "Wait a minute. Up to this point you've got a good story—but you've got twice as many scenes as we can possibly use. Hadn't we better eliminate some of the less important ones, and telescope others together, before we get the sets built?"

Again, in almost every studio, sets are frequently built greatly in excess of what the action really requires. Some directors appreciate this; many others, with their minds concentrated solely on the dramatic action, don't seem at all able to visualize what is to be put on the screen. For example, in one recent picture there was a sequence laid on the terrace of a big resort-hotel. I understand that the set built for this sequence included the entire terrace and grounds of the hotel, and part of the lobby, and covered the whole of a very large stage. But the action to be filmed consisted of only a few intimate two-shots of a couple at a table on the terrace, and one "walk-through" which could easily have been eliminated!

Frequently we'll see scenes which specify as their location a cafe or night-club. The average set designer or direc-

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We are pleased to present herewith the first of a series of articles in which Mr Larsen one of America's foremost authorities on the professional use of 16mm will deal in detail with the problems and technique of 16mm professional production, including camera and recording equipment and their use film products editing and re-recording technique set-construction, location problems production planning and the like It is, we believe one of the first if not actually the first detailed discussions of 16mm methods and equipment from a strictly professional viewpoint It is the first of a number of similar practical features dealing with 16mm commercial film work scheduled for publication in THE AMERICAN CINEMATOGRAPHER in the immediate future THE EDITOR

Professional Production In 16mm.

By JAMES A. LARSEN, Jr.

Cinematographer Larsen at the camera filming [illegible] 16mm sound production for Coronet Productions

NO one questions the remarkable progress which 35mm motion picture production for theaters has made in the past twenty years Anyone who has recently seen a film made in the twenties and compared it with a film made in the forties is apt to be amazed at the technical and artistic advances which have occurred.

These vast improvements have taken place so gradually that they have not been evident as they occurred but only became striking when a direct comparison of the product of two different decades is made. To a somewhat lesser degree, a comparison of a film made in the early thirties with one of 1940 or 1941, would reveal remarkable improvements. Recently, an opportunity for such a direct comparison was made possible when Paramount released the film "Glamour Boy" featuring Jackie Cooper In the recent release of this film, there were several scenes showing Jackie Cooper as a child which were made in the early days of the talkies. Since these were placed in the film adjacent to scenes made last year, the comparison was striking.

Because so many professional cinematographers have been close to the progress of 35mm production, the fact that 16mm production has undergone a parallel development and has attained professional stature has not been fully realized With professional 16mm. camera and sound equipment and the fine-grain emulsions available today, it is possible to obtain results in professional 16mm production which are difficult to distinguish from 16mm reduction prints from 35mm originals

16mm. films are being shown in large auditoriums seating thousands of people by means of 16mm. arc projectors which deliver a brilliant image on a screen 30 feet or more in width from a picture less than half an inch wide Special amplifiers and large auditorium speakers are available to deliver adequate volume for large audiences from 16mm sound films

Laboratory fades, dissolves and wipes, double-printing, multiple images and many other trick effects can be done in 16mm. by methods which will be described in detail in later articles Direct 16mm. sound recording and re-recording equipment is available which makes possible the recording and mixing of any number of 16mm sound-tracks

By shooting on Kodachrome or on black-and white reversal emulsions, it is possible to record both picture and sound on a single film with a 16mm Sound Camera. With Eastman's new duplicating Kodachrome film, remarkably faithful color prints can be made from 16mm Kodachrome originals, with or without sound By a recent development, 16mm Kodachrome can be enlarged to 35mm Technicolor so that a whole new field of activity is opened to the professional producer of 16mm. films.

Nineteen years ago, 16mm. film made its bow as a convenient and inexpensive medium for amateur home movies. Today, 16mm film is recognized as a dependable medium for the most complicated professional production of industrial, educational and even theatrical films. The last two decades have seen developments in 16mm which parallel those of 35mm and lag behind 35mm. by only a few years. Sound-on-disc came to 35mm. in 1927; to 16mm. in 1930. Sound-on-film recording on 35mm film was done commercially in 1928 while the corresponding development in 16mm took place commercially in 1932 A satisfactory three-color process came to 35mm. in 1934 in the form of Technicolor, followed only a year later by 16mm. color in the form of Kodachrome

Thus it has been that every major step forward taken in 35mm has been followed within a year or so by a corresponding step in 16mm This growth of 16mm. from an inexpensive medium for amateur home movies to a thoroughly professional medium for educational, industrial and even theatrical productions, has been largely due to the persistent work of a small group of equipment manufacturers and producers who had faith in the results obtainable in 16mm This group not only invented new equipment to use existing 16mm film emulsions, but in some cases, prevailed upon film manufacturers to bring out new 16mm emulsions more suitable to professional requirements This cooperation between film and equipment manufacturers is one of the factors which has resulted in the successful achievement of professional results in direct-16mm. production.

A very substantial contribution to this progress was also made by the 16mm. professional producer, who in many cases suggested changes in equipment and film emulsions which made better results possible.

Although 35mm film was standardized

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Aces of the Camera XV:

"TONY" GAUDIO, A.S.C.

By WALTER BLANCHARD

THIRTY years ago the Biograph Company—then America's foremost producing organization—sent a trompe of its best actors, directors and technicians out to California where they could keep on making movies outdoors throughout the sunny California winter. Somewhere along their route west—Albuquerque, I think it was—these movie-making tourists lined themselves up along the station platform and had their picture taken.

Prints of that old picture still exist. In them, you can recognize such early day favorites as the Gish sisters, Henry B. Walthall, and others. And standing importantly in the middle of the group is a distinguished looking gentleman with a white pique vest and a pair of truly impressive, flowing black mustaches. A most important member of the troupe he was, too, for as the captions will tell you, he was Gaetano Gaudio, Biograph's ace cameraman, with whom rested the responsibility of capturing on celluloid the results of the forthcoming winter's work.

That was thirty years ago. But today, if you should visit the set at Warner Bros. where Ann Sheridan and Dennis Morgan are making "Shadow of Their Wings," you would find that the Director of Photography is this same "Tony" Gaudio, A.S.C., who now, as then, is rated as one of the industry's greatest cinematographers. He's one of the best known and best loved figures in the industry. He has to his credit over 1,000 successfully-photographed productions, ranging from the split-reel 500-foot "features" of the early days to modern multi-reel super epics like "Anthony Adverse," with which not so long ago he won the Academy Award.

To him, that backlog of experience is one of the greatest assets any cinematographer can have. "Every day that you're shooting pictures," he says, "you run into new problems. But if you've been in the business a long time, and made lots of pictures, you'll find that most of these problems are only new on the surface. When you get down inside—to the essentials—you'll usually find there's at least a family resemblance to some problem you met and licked in a picture years ago.

"But don't get it wrong. I don't mean that if you come up against a problem in a modern picture you should try to solve it by doing exactly what you did ten or twenty years ago. Too many things have changed since then—and the cinematographer, just like anybody else, has got to be in step with the times. I do mean, though, that you'll do your job more efficiently if you can look back into your memory and find that resemblance. You know what you did then; now, to meet a similar situation, you take the basic idea of what you did then, and dress it up in modern clothes so that it works out well with modern materials and methods, and especially with modern ideas. That way, you take a short-cut that saves you trouble, and saves the company a lot of time and expense.

"Sometimes, when a cinematographer brings one of those old ideas up-to-date, they can hit modern audiences with all the force of a new idea. That's what happened, I think, with Gregg Toland's 'pan-focus.' A lot of us had for some years been slowly working away from the heavily diffused and rather artificially-lighted effects that used to be the style a dozen or so years ago, and trying to find something more realistic and modern. In 'Citizen Kane' Gregg had a picture that practically dared everyone concerned to be daring and break away from tradition. So Gregg turned to some basic principles that were almost as old as photography itself, and modified them to work with modern materials and to be in line with modern ideas. The result was something that seemed radically new to a lot of people.

"But it isn't only in big, spectacular things like that that experience pays. It is valuable every day in all sorts of little, routine details, too. For example, suppose the studio asks me to make a test of some new girl they've signed. Maybe today's audiences will look at her first according to how she resembles—or doesn't resemble—today's favorites like Bette Davis, or Ann Sheridan or Olivia De Havilland. If I tried to photograph her with that sort of thought in mind, I'd probably try to make her look like a pale carbon copy of one of those girls. Instead, I try to look at her for herself, and analyze her features. Maybe I see that she's got some features that resemble those of somebody I photo-

(Continued on Page 137)

THROUGH the EDITOR'S FINDER

RECENT trade-paper headlines indicate that the major studios are considering, as a wartime move to conserve film, electrical power, chemicals, time, effort and money, the adoption of a rule whereby production units would be restricted to a maximum of three "takes" of any given scene. This looks like a worthwhile move—and one which could well have been made long ago, for very few scenes in the average picture are so exacting dramatically, or so intricate mechanically as to be beyond the possibility of filming successfully within three takes, if they have been prepared and rehearsed with sufficient care. The industry's photographic and sound crews almost invariably report their intricate operations "OK" at the first take. A number of the industry's most distinguished players and directors have established reputations as "one take artists." Therefore, does it not seem logical to conclude that—always with the exception of the unusually difficult scene—players or directors who insist on rehearsing with film running through the camera to the tune of from eight to eighty takes per scene are, by inference, admitting either to incompetence or to unjustifiable vanity?

We'll wager that, should this three-take ruling be applied, we'd see the majority of our scenes captured successfully on the first take, for people who now tend to "walk through" the first several enactments of a scene they know will have to be gone through half a dozen or a dozen times would be on their toes to "give"—and give successfully—the first time if they knew they had but three chances.

But if the savings of material, time and effort obtainable through restricting the number of takes are so important, why not carry the idea to its logical conclusion? Why not strive to eliminate the film, time, effort and money that are now wasted on unnecessary "protection shots," on over-length scripts which include scene after scene which can never reach the screen, on retakes and added scenes of action needed to tie the picture together, but which were originally missing from the script, and on retakes made necessary by lack of coordination between sets, costumes, locations, and the requirements of camera-presentation?

It could be done very easily, by calling the Director of Photography into consultation earlier in the making of a picture, so that his picture-trained mind could take an active part in the vital process of completing a script and preparing it for actual shooting. On the set his visualizing power, his technical skill and his photodramatic experience are daily being called upon to help repair or bridge over these gaps; but such emergency measures cannot make perfect something which was faulty to start with, nor can they create genuine efficiency in a system which is essentially an inefficient makeshift.

Restricting the industry's scene takes to three will unquestionably effect economies the industry—and the Nation—need today. But great as these economies are, we're confident they would be equalled, and probably surpassed by the saving that would follow the elimination of useless "protection-shots," over-length scripts, avoidable added scenes and all the other wasteful, slipshod practices which could be avoided by camera-minded pre-production help in the planning of our pictures!

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GLANCING over a list of the major Academy Award winners the other day, we were impressed by the way certain names kept repeating as two- and three-time winners of premiere honors in the directing and acting classifications. Contrast this with the fact that *no Director of Photography has ever won more than a single "Oscar" for the year's best camerawork!*

There are various explanations for this. Some may like to attribute it to luck—to the undeniable fact that some pictures offer inherent opportunities for outstanding cinematography, while others don't, and that the superlative opportunities don't come every year to even the so-called top-flight cinematographers. To us, this argument would hold water a great deal better if there weren't every year so heavy a proportion of the same names among the nominees—often enough for pictures which were outstanding achievements simply because the cinematographer, rather than story, conditions, locale or luck, had made them so.

The explanation we prefer is that the industry today has so many Directors of Photography of legitimately Academy Award calibre that no one or two men can be great enough to dominate the photographic fields as consistently as Frank Capra, John Ford, Frank Lloyd and Bette Davis have so often outpaced the fields of direction and acting. True enough, the photographic profession has its stars no less than do the other phases of production—men whose names and achievements are with almost clock-like regularity among the Academy nominees. But for every one of these "aces" there are always fifteen other contenders with equal, and frequently superior achievements, to say nothing of a number of others whose work would merit equal recognition did not the nominations have to be limited to ten monochrome and six color productions. Rarely, indeed, can this be said for any of the other fields. By all evidence, then, competition for these two Photographic Awards must be adjudged not only the keenest, but on the highest level, of any of the Industry's annual honors, and the achievement of winning, perhaps the most praiseworthy of all the many achievements honored by the golden statuettes.

WHEN peace is at last restored at the end of this war, historians and dramatists alike are going to find a rich treasure in the billions of feet of motion picture film which are chronicling every phase of both sides of the conflict. Never before in history has any conflict been so authentically documented. Our own Government is drawing heavily on the skilled manpower of professional cinematography—both studio and newsreel—not alone for the making of instructional films wherewith to train combat troops, but for the making of a living record of every possible bit of major action. Our allies—Britain, Russia and the other members of the United Nations—are doing the same thing. Our enemies, perhaps even more thoroughly aware of the teaching, historical and propaganda value of films than we were at the outset, have made trained motion picture and still units as competely a part of every field force as machine-gunners or medical squads. The fall of France and the Low Countries, we understand, was recorded on some 20,000,000 feet of motion picture negative by German Army cameras. The camera-minded Jap is probably only a little behind this.

Today's historians have eyewitness accounts of Washington at Valley Forge, of Napoleon's retreat from Moscow; they have Brady's wet-plate still photographs of our Civil War and its leaders, and some comparatively few, flickery cine-films of a little of the action and some of the personalities of World War I. But already the military cameras of this greater conflict have brought us actual motion pictures of virtually every significant action from the Battle of France down to Pearl Harbor and to the latest raid on Japan's Pacific islands. We can see Britain's Commandos in action, our own A.E.F. landing in Ireland. We can see and hear great leaders like Roosevelt, Churchill, Chiang Kai-Shek and MacArthur telling in their own words the progress and problems of the conflict.

Camera and microphone are today recording in living form the story of this mightiest of conflicts. Today, they are telling those of us on the home front of the successes and set-backs, the victories and disasters, *as they happened*. Tomorrow, when they record—as record they will—the eventual victory, what a rich heritage they'll leave to those who follow!

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DURING the last several months, we've received an unusual number of letters from our readers, both professional and amateur, telling us of things they liked or didn't like in the magazine, and often suggesting things they'd like to see in our pages. We appreciate those letters. They help us to make THE AMERICAN CINEMATOGRAPHER more nearly the magazine its readers want it to be.

A.S.C. on Parade

Our Favorite Swede, **Ray Fernstrom**, A.S.C., dropped in to tell us he'll be missing "for duration" from his Hollywood haunts. Dusting off his Signal Corps (Photo Section) uniform and waiting orders, he'll be **Lieutenant Fernstrom** from now on

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There are rumors, too, that **Byron Haskin**, A.S.C., is another member who counts his 'A.S.C." as standing for Army Signal Corps. Well, Uncle Samuel has gone and got himself a darn good cinematographer. We'll miss you, **Bun**—and so, we'll bet, will the brothers Warner!

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"Among the missing"—only temporarily, we hope—is the A.S.C.'s only East Indian member—**Prasart Sukhum**, A.S.C., last address Bangkok, Thailand (Siam, to you.)

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Our sincerest sympathies to **George Seid**, Columbia's Laboratory Chief, on the loss of his son, Ensign Daniel Seid, of the Navy Air Force, reported lost in action.

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Biggest film story of the month was lensed, not by any studio cinematographer, but by ex Hollywood newsreel "aces" **Joseph Rucker** and **Mervyn Freeman**, who had the U. S. Navy performing for their cameras in a hard-hitting action story staged for Mr. Jap's benefit around the Marshall and Gilbert Islands. Send us enough more of the same, boys, and we'll be glad to keep next year's Academy "Oscar" in cold storage for you—!

This shouldn't be news to anyone who's seen "How Green Was My Valley"—but **Arthur Miller**, A.S.C., has been handed a richly-deserved new contract at Col. Zanuck's 20th-Fox picture-factory.

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For that matter, the contract inking department at T-C-F has been working overtime this month. **Glenn MacWilliams**, A.S.C., has been persuaded to spend the next year there, and **Paul Eagler**, A.S.C., will do the same, shooting process with **Eddie Snyder**, A.S.C., who, in turn, is subbing as Process Department Head for **Lieutenant Solly Halprin**, U.S.N.

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Franz Planer, A.S.C., teams with Director Richard Wallace making Columbia's "Highly Irregular."

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W. Howard "Duke" Green, A.S.C., planes down to Rio de Janeiro to take charge of Technicoloring Orson Welles' untitled Pan American epic. As "production" lenser on the same film **Harry Wild**, A.S.C., gets a richly-deserved break into the big-time lensing field after making an outstanding name for himself filming RKO westerns.

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Also Pan-Americaning is **Will Cline**, A.S.C., off to Central America to Technicolor a series of Fitz-Patrick-MGM shorts. He's driving to Mexico City, after which he'll fly and train through Gautemala, Salvador, Honduras, Nicaragua, Costa Rica and Panama.

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Elmer Dyer, A.S.C., and his family must like music—or somep'n—for counting the static-boxes in the three cars, the Dyer household sports no less than 11 radios!

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Clifford Stine, A.S.C., has enlisted in the Photographic Division of the U. S. Army Air Forces.

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Fred Jackman, Jr., A.S.C., up and out again—but still a bit pale—after an emergency operation for a ruptured appendix. The Doc says he'll be recovered in time to film the next Pine-Thomas pic come the middle of March.

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Eddie Cronjager, A.S.C., waving a cheery greeting as his big, black Zephyr makes Ye Ed jump for his life at a street corner.

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Peverell Marley, A.S.C., back on deck at 20th-Fox after a serious siege of bronchial pneumonia.

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Jerome Ash, A.S.C., remarks these new built-in slaters that Universal is putting on the cameras are fine, but they rob the business of an outstanding sporting event—the Assistant Cameraman's sprint to get out of the scene after slating each take!

Thanks

To our fellow-cinematographers of the Motion Picture Industry, who so signally honored us by voting us the Academy Awards for the best black-and-white photography of 1941, we wish to extend our sincerest appreciation and heartfelt gratitude.

Arthur Miller, A.S.C.
Ernest Palmer, A.S.C.
Ray Rennahan, A.S.C.

Lee Garmes, A.S.C., follows his old running-mate Ben Hecht to 20th Century Fox, and inks a nice fat contract.

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Lester White, A.S.C., draws the plum of photographing Edward Small's latest—"Annie Rooney" (no longer little!) with Shirley Temple.

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Harry Perry, A.S.C., continues getting the nicest trips. RKO has just sent him to New York to film backgrounds for "It Comes Up Love," followed by a jaunt to Miami for more of the same.

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"Hellzapoppin'" isn't the word for it as far as **Elwood Bredell**, A.S.C., and Universal are concerned. By way of thanks for the fine job he did putting the Oleson-Johnson flicker on film, **Woody's** been handed a fine new 5-year contract at the Valley plant.

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And Skipper **Verne Walker**, A.S.C., over at RKO, has just had his option as Process Department Head lifted well ahead of schedule.

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George Barnes, A.S.C., goes to Universal to film their big special, "Broadway." He's on loan from Selznick—oddly enough, while he's been under contract to D. O. S. for over a year now, he has yet to do a picture on his home lot, though he's done plenty of fine ones "on loan" since walking off with last year's "Oscar."

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Marcel le Picard, A.S.C., draws the assignment to photograph "The Panther's Claw," first of the series of Anthony Abbott "whodunits" for Producers' Releasing Corp.

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'Twas a pleasant surprise, dropping in at Paramount and finding Mark Sandrich and Fred Astaire had lured our old friend **David Abel**, A.S.C., out of his comfortable retirement on his Azusa ranch to film "Holiday Inn."

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Stop-press flashes: **Leonard Smith**, A.S.C., recovering from a sudden severe illness . . . **Charles W. Herbert**, A.S.C., Universal's "Going Places" traveller, in town for an unexpected visit . . . **Joseph Valentine**, A.S.C., relaxing after finishing "Saboteur" with Alfred Hitchcock.

PHOTOGRAPHY OF THE MONTH

TO BE OR NOT TO BE

Alexander Korda Production, United Artists Release.

Director of Photography. **Rudy Maté, A.S.C.**

Rudy Maté, A.S.C., has made the visual aspect of Carole Lombard's final screen appearance everything that she or her most devoted friends could wish. Seldom, if ever, has this beloved star appeared to better photographic advantage. The film is, as well, excellent entertainment.

Maté's handling of the production itself is well worth seeing. He had a decidedly unusual situation to face: farce comedy counterpointed with strong melodrama and played against perhaps the most tragic background today's scene affords—Nazi-ruled Poland. To meet this problem, Maté departed radically from his usual photographic technique. His lightings are strong and forceful, yet often in a surprisingly high key for such melodramatic action. There is a curiously pleasing blending of a somewhat European technique with the "pan-focus" effects which have been coming into vogue during the past year. To one who was most familiar with Maté's work as shown in such recent releases as "That Hamilton Woman" and "Flame of New Orleans," it would seem almost incredible that the same artist should have photographed "To Be or Not To Be."

The production inevitably calls for a considerable number of effect-lightings, which Maté has handled with particularly good result. His rather extensive use of arc lighting also adds to the atmospheric value of the production.

The special-effects work of Lawrence Butler and the strikingly atmospheric sets of Vincent Korda are other highlights of a film which is from every viewpoint well worth the seeing.

ROXIE HART

Twentieth Century-Fox Production

Director of Photography: **Leon Shamroy, A.S.C.**

To really appreciate "Roxie Hart," you'd better see it twice—once to enjoy one of the funniest pictures of the year, and the second time to enjoy one of the most interesting examples of fine camera-work Leon Shamroy, A.S.C., has ever put on film. From the viewpoints of composition and lighting alone, almost every scene will repay careful study. Throughout the picture, his set-lightings provide a pictorially interesting, yet believable background for his action. This, in turn, is presented in a series of equally interesting portrait-lightings (especially in the cases of the men) which etch the characters with unusual reality.

Shamroy's treatment of Ginger Rogers is the best she's had in some time. Apparently Shamroy, or someone there at 20th Century-Fox, was able to take the young lady in hand and convince her that the type of makeup she has been wearing in all too many previous releases was not to her own advantage. At any rate, with the best makeup we've seen her wear in a long time, and with the advantage of Shamroy's skill in lighting, she makes a more pleasing appearance than ever before.

Students of either professional or amateur screenwriting technique will find several interesting "twists" in story-presentation in this picture which also are well worth studying.

THE REMARKABLE ANDREW

Paramount Production.

Director of Photography: **Theodor Sparkuhl, A.S.C.**

From its opening title—which is spoken, rather than written—to the final fade-out, "The Remarkable Andrew" is one of the more remarkable pictures of the season. Director of Photography Theodor Sparkuhl, A.S.C., does very well his part of making the picture visually interesting, as well. The action calls for a considerable number of effect-lightings, which he handles most interestingly, and the story and characterizations give him abundant opportunities for strongly effective portrait-lightings in his closer shots of the players—especially Brian Donlevy, as Andrew Jackson.

Centering as it does around the ghostly reappearance of Jackson, Washington, Franklin, and other famous historical characters, the picture inevitably calls for a good deal of split screen and double-exposure work. Since no credit is given for special-effects, it is presumed that these trick shots were done largely in the camera by Sparkuhl. If so, he has handled them uncommonly well, for many of these scenes take rank among the best examples of such work we've seen in a good while. It might possibly be objected that the story would have been more convincing if at all times when Jackson and the other ghosts appeared in the scene with any other players than the hero, who alone was supposed to be able to see them, they could have been presented by means of double-exposure, or even materialized and dematerialized in "Topper" fashion. However it must be realized that this would have been disproportionately difficult, with so many "ghostly" characters appearing in so many scenes, and as a matter of production practicability the course followed was probably best.

DANGEROUSLY THEY LIVE

Warner Bros.-First National Picture

Director of Photography: **L. William O'Connell, A.S.C.**

In making this picture, everyone concerned seems to have been working under a handicap. It is a low budget production, and was made, moreover, during the period of the recent congressional inquiry into movie propaganda, and, so we gather, story and construction were repeatedly changed around to denature the film's anti-nazi angles. The picture also appears to have suffered considerably in cutting, probably from the same cause.

In view of this, Director of Photography O'Connell has done a commendable job. Enough of his original conception remains to make it evident that he approached the picture with an interestingly unorthodoox viewpoint. The story is a melodrama of Nazi espionage and counter-espionage. As such, one would normally expect to see it photographed in a comparatively low key, with strong melodramatic contrasts. But O'Connell approached it differently. Much of the plot hinges upon actually melodramatic things happening under circumstances where they outwardly appear normal and innocuous. Therefore, he has photographed much of the action in a normally high key, quite as though the film were a normal comedy-drama. This visual contrast between surroundings and the emotional mood of the action, interestingly enough, serves definitely to heighten the emotional response, making the story more effective than it would be if photographed in conventional melodramatic key. We'd like to have seen the film unmutilated, as its writer, director and cinematographer must have originally planned it.

THE LADY HAS PLANS

Paramount Production

Director of Photography: **Charles B. Lang, Jr., A.S.C.**

"The Lady Has Plans" is hardly to be compared as an example of Lang's work with "Sundown," but he has given it the customary Lang polish. His high-key set-lightings are deft and decorative, and the players appear to good advantage. In the sequences where the action goes strongly melodramatic, Lang's effect-lightings are crisp and convincing. All told, it's an excellent job, but somehow we'd like to have seen the talent and effort expended on a bit more of a story.

SULLIVAN'S TRAVELS

Paramount Production

Director of Photography: **John F. Seitz, A.S.C.**

Transparency Process Photography: **Farciot Edouart, A.S.C.**

Preston Sturges' pictures always seem to run the proverbial gamut, and "Sullivan's Travels" is no exception. Cinematographer Seitz' camera has to run

Frame enlargement from two scenes from "Captains of the Clouds" Planes shown are not a squadron of full-sized "Hudson" bombers—they're miniatures

MINIATURES FOR 16mm DEFENSE FILMS

By BYRON HASKIN, A.S.C.

Head of Special Effects Dept., Warner Bros First National Studio

SINCE America's amateurs have been getting into production on Civil Defense Films, THE AMERICAN CINEMATOGRAPHER has been receiving an increasing number of letters which say in substance, "Dear Sir: I am making a 16mm. film on Air Raid Precautions for my local Defense Council. My script calls for a sequence showing an air raid, with bombs exploding, buildings burning, and so on. Can I do this as a miniature in 16mm.? If so, will you please tell me how to do it?"

Scenes like this can be done quite successfully in miniature with today's better 16mm. equipment. But if you expect success, you've got to approach your task in the right way Don't think, because you're using miniatures, that they're either toys, or toy-sized, just because they're comparatively small. *Toys will never produce a convincing motion picture miniature scene.* Some types of scale models, such as the model plane and railroad hobbyists make, can be used very satisfactorily for movie miniatures But you've got to plan, build and photograph your miniatures *as miniatures,* with the same seriousness and attention to detail the professional uses!

Virtually all movie miniatures depend for their effectiveness on two key factors—correctness of scale and perspective, and the use of high ("slow-motion") camera speeds. The first gives you the correct visual effect on the screen The other smooths out irregularities of motion and creates an illusion of normal size and massiveness which, on the screen, will make your miniature appear like the real thing.

The amateur is somewhat handicapped in this latter respect Very few 16mm cameras will operate at a speed faster than 64 frames per second, while the 35mm professional has at his disposal cameras which can be operated at from two to three times this speed. This means that to secure a comparable effect, the amateur's miniature must be built to a comparatively large scale, for obviously, to secure a given effect of massiveness on the screen either your camera should be turning over at a higher "slow-motion" speed, or your miniature built to a larger scale For example, if you own or have access to one of the Victor cameras which have a maximum speed of 72 frames per second, you'll find you can use somewhat smaller-scale miniatures than you can with an outfit capable of only 64-frame speed And if you can manage to get hold of one of the comparatively few "Golf Special" Filmos made by Bell & Howell, which operate *only* at a speed of 128 frames per second, you should be able to use miniatures about half the size of those you'd require for a 64-frame-speed 70D-A Filmo.

However, for most practical purposes, 64-frame speed will do well enough. For the best results, I'd strongly urge using miniatures built to a scale of 1 inch to the foot, though in a pinch, ½-inch scale miniatures will do fairly well.

Shooting at this speed, exposure can be quite a problem. Therefore, unless you're shooting your picture in black-and-white, where you can employ a super-fast film like Eastman Super-XX, and have an unusually abundant supply of lighting equipment to boot, I'd certainly advise you to shoot your miniatures outdoors. Plenty of professional miniatures—especially floods, large-scale marine miniatures, and the like are filmed outdoors, anyway.

Except in the comparatively rare instances where you are deliberately trying to suggest an airman's view, always shoot your miniature scenes with the camera's lens placed as close as possible to what would be eye-level for a man reduced to the same scale as the miniature scene. This, you see, gives you a normal viewpoint on your scene. If you shoot from even slightly above this level, you'll get too much the effect of Gulliver looking down on the city of the Lilliputians In doing this, take a tip from the model railroad builders: they don't put their railroad layouts on the floor the way Junior does, but instead build them—scenery and all—on large tables at least waist-high You'll find this sort of platforming, where possible, will save you a lot of inconvenience you'd otherwise have, squirming around on your tummy to get the right angles!

In making miniature sets to represent a comparatively large expanse, such as a city or a battlefield, the professional conserves space by using what is called "forced perspective." In this, the objects nearest the camera are built to a comparatively large scale; those in the middle distance, to a smaller scale, and those in the background to a still smaller scale, with a photographic or painted back-drop to complete the scene Naturally these forced perspective miniatures have to be planned and built with particular care, and a knack that comes more from experience than from any arbitrary rules But properly done, a miniature of this type can give an amazing impression of depth

Lighting can also help in creating this illusion of depth Speaking generally, a cross-lighting or a front-cross lighting is best. And if you can, try to contrast the alternate planes of your set by alternating planes of highlight and shadow with, for instance, the immediate foreground shadowed, and silhouetted against a more brightly illuminated plane which in turn is contrasted against a shaded plane, with a more brightly lit background. In general, you'll find it best to keep the plane in which the most significant action occurs fairly well illuminated Keep the shadows fairly "open," and with rather soft edges This is easy enough if you're working by artificial light; if you're working outdoors, you can do it by suspending strips of white muslin with slightly frayed edges between your set and the sun so that they cast their shadows where you want them.

Building miniatures is no job for a person who isn't a good bit more than just "handy with tools." My suggestion is to see if you can't enlist the cooperation of the model hobbyists in your community. They're already experienced in this sort of work, and many of them are organized into clubs which should, if properly approached, help you to put your miniature-building on something of a mass-production basis. Most of them are specialists, too You'll find some specialize in building model airplanes, while others make model railroads, ships, autos, and so on. From the model rail-

roaders, you can probably enlist one or two who are particularly expert in building accurately scaled model scenery, buildings, and so on. And—don't jump to the conclusion that all these model fans are of high-school and boy scout age; they're not—not by a long shot; you'll find plenty of adults—doctors, lawyers, bank-presidents and the like among them, just as you'll find them outnumbering the juniors in amateur cine work. And they're just as patriotic, and just as eager to put their skill to work for their country, as the amateur filmers are!

However, for movie miniature purposes, you'll have to impress upon these model-builders one definite change in technique. In their hobby, a model-builder's skill is to a great extent evidenced by the amount of detail he is able to fashion into his model. Detail is an excellent thing, but too much of it can prove harmful to a movie miniature because the camera will pick it up and reveal details in the miniature shot that it wouldn't catch in a similar shot of the real thing. This may not be consciously noticeable to the average audience, but they get it subconsciously as an intangible feeling something about the shot is somehow "phoney." Have your miniature-builder put in just about the amount of detail you'd see in the real thing at a long-shot angle. Then, if the miniature and its setting are properly scaled, and the camera-angle well chosen, you'll get on the screen just about what you want.

For photographing miniatures, a camera like the Cine Kodak Special, with which you can focus your full frame image on a ground-glass focusing screen, with the lens in actual photographing position, is a tremendous advantage. It gives you a much better idea of precisely what you're going to get than is possible any other way. The same can be said for one of the magazine-type cameras if equipped with one of the ground-glass focusing attachments. However, you want to be sure your magazine-camera will behave properly at 64-frame speed, without scratching the film or any sort of magazine troubles.

If you cannot use one of these cameras which permit full-frame ground-glass focusing, you should certainly make use of a focusing alignment gauge which permits you to slide the camera over so that, for lining up, the finder occupies the identical position that the lens will in shooting. Gadgets like this are commercially available for the Bell & Howell cameras, and they can be made up without too much trouble for any other type of camera. They're almost essential in serious miniature work. Otherwise, you may unexpectedly find on the screen that you've inadvertently photographed beyond the edge of your miniature area, or that you get an undesired, "give-away" reflection from the wires used to manipulate your miniature, or some other fault which can only be detected by lining up your shot from the identical viewpoint the lens will have in shooting.

A scale model plane like this one being held by actor George Tobias would be satisfactory for 16mm use, though a larger scale model, about 1 inch to the foot, would be preferable.

Manipulating your miniatures is another important factor. The action can not safely be left to chance; the better control you have over the moving parts of your miniature, the better and more convincing the results will be. Photographing miniature airplanes, for instance, don't expect to get a good shot if you merely toss your model plane through or into the scene. Don't try to use even large-scale flying models either; in the first place, they aren't as a rule built to sufficiently accurate scale, in the second place, they'll fly too fast, and offer too little control, to give convincing results.

What the model-builder calls non flying "display" scale models will prove best. For picture purposes, however, be sure to remove the propellor. In most shots, you can substitute a carved spinner for the "prop", it will give the effect that the propellor is still there, but revolving too rapidly to be visible—which of course is precisely the effect we see when we look at a real plane in flight. Once in a long time we may want to reproduce in our miniature the blurry circle made by a swinging airscrew; in this case, replace the miniature's propellor with a disc of the same diameter, cut from a piece of transparent celluloid.

Support your miniature plane with fine piano-wires from above. These should be attached at the wing-tips and tail. If the plane is simply to fly level, you can fasten these supporting wires rigidly to a little T shaped wooden carriage which, in turn, rides on three parallel, horizontal wires overhead, preferably on rolling pulleys.

But if your plane is to dive, climb or turn, you'll want a positive means of control. In this case, instead of attaching your three supporting wires to the T-shaped carriage overhead, carry them through eyelets or pulleys to some convenient point out of the scene, and there, if you like, fasten them to another T-shaped controller.

This way, by playing out all three wires, you can make the plane lose altitude. If you pull in a bit on the single wire supporting the tail, the tail will rise, and the plane will seem to be diving. If you pull all three wires in, but pull a bit more strongly on the two wingtip wires, the plane will rise, nosing up, and seem to be climbing. Pulling in on one wingtip wire or the other will make it bank. Do any of these as the plane moves through the set along the overhead wires, and you can make the little craft dive, climb or bank. For accurate control, of course, your miniature plane must be heavy enough to keep the supporting wires straight and taut.

Even though you use the finest piano-wire possible, it is always likely that a

(Continued on Page 137)

Kodacolor Introduces Negative-Positive Color Stills

By WILLIAM STULL, A.S.C.

NATURAL COLOR photography with any ordinary camera, by means of a simplified, single-film negative-positive system, has been the goal of research scientists and practical photographers for over a century. For the last forty years we have been slowly approaching it; we have had a variety of systems by which excellent color stills and movies could be made. But color transparency systems like the old Lumiere Autochromes and today's Kodachrome, or "one-shot" still and movie cameras which make three black-and-white separation negatives which require intricate and costly subtractive printing before giving a color result, are acknowledgedly only makeshift steps on the way to that goal.

Today, that age-old dream of photographers seems on the verge of realization. The Eastman Kodak Company has introduced a new system named Kodacolor, in which a special negative film may be exposed in any rollfilm camera, developed into a color-negative, and printed on a special, color-sensitive positive emulsion, paper-based to give full-color prints on paper with all the ease, and very nearly the economy of black-and-white! Very logically, its sponsors are first introducing it to the field of widest possible usefulness and sales—the field of amateur still photography, but it seems probable that eventually the basic principles of the process may be extended to include not only professional still photography, but to bring simplified negative-positive color cinematography to both the 16mm commercial and the 35mm professional fields as well.

The present Kodacolor process (which has no connection with the similarly named and now obsolete additive cine process of a dozen years ago) is a technological offshoot of the familiar Kodachrome process. In Kodachrome, as is well known, three selectively-sensitized emulsions are coated on the film, together with appropriate separating and filtering layers. The top layer is blue-sensitive; beneath this, a yellow filter layer and a green-sensitive emulsion, and at the bottom, a red-sensitive emulsion. The film, after exposure, is given substantially standard reversal-processing, resulting in three superimposed positive images, each of which records, though in black and white, one of the three primary color-components of the scene. These black-and-white silver images are then successively bleached out, and replaced with corresponding dye-images, each in its appropriate subtractive color, with the result that the three, superimposed, produce a full-color picture.

When Kodachrome was originally introduced in 1935, this processing was to say the least extremely complicated, and the dyes used to form the final color image were not always stable. But during recent years, this processing has been immensely simplified by means of what the photochemists call "coupler development." In this, chemicals mixed with the silver granules forming the emulsion react with chemicals in the developing solution and are transformed into visible dyes of the appropriate colors. As the various "couplers" to produce each primary color are each coated in the corresponding emulsion-layer, and as the color-forming action is directly proportioned to the developing reaction between the developer and the exposed silver, the result, when the silver image has been developed and then removed, is a dye-image in color, identical with the silver-image upon which it was based.

This action, in its simplest form, should be familiar to anyone who has developed still or cine negatives with such agents as the old standby, pyro, or such modern fine-grain developers as paraphenylene-diamine. In each case, a visible dye image is produced in addition to the regular black-and-white silver image of the negative. In the case of pyro, this image is brownish; with most diamine based fine-grain developers, it is a creamy tan.

Dr. C. E. K. Mees, A.S.C., of the Kodak Research Laboratories, explains the chemistry of "coupler development" by stating that "when a developer reacts with silver bromide and forms silver, its oxidation product as it is formed reacts with other chemical substances in the solution and forms colored compounds, that is, dyes. This is true only of certain developing agents, particularly those known as diamines. When the diamines develop silver bromide, their oxidation products formed at the same time combine with many types of chemicals which are known as "couplers," and give rise to strongly-colored dyes which are deposited in the film with the silver formed by the development of the image.

"The details of the mechanism of dye formation have not been completely established, but it is believed that the first reaction occurs between the developer and exposed silver halide to produce silver. In this reaction, the developer is oxidized to an extremely reactive intermediate product, which immediately reacts with the coupler. This second reaction probably forms the leuco dye, from which the dye itself is generated in a subsequent oxidation step.

"The couplers are distinguished chemically by their possession of a reactive group, usually methylene. The cyan couplers are usually phenols, thus a typical compound would be chlorinated naphthol. Magenta couplers are often nitriles or pyrazolines, and the yellow couplers are typically esters, ketones or amides. The couplers may be added to the developing solution, in which case they must be of relatively low molecular weight and be soluble in the alkaline solution, or they may be incorporated in the emulsion layer. In the Fischer process (of which Kodacolor is a modification W.S.), the couplers were incorporated in the layers, each coupler in its appropriate layer, so that during development three different dyes would be produced simultaneously.

"In the present Kodachrome process, the exposed film is put through an ordinary developer to produce a silver image. Then the film is exposed through the base to a red light, which makes developable the hitherto unexposed silver bromide in the bottom (red-sensitive) layer, and this is developed with a cyan coupler, so that in the bottom layer a positive image in cyan (blue-green) dye is associated with the development of the whole of the silver bromide originally present in that layer. Next, the top side of the film is exposed to blue light and is passed into a developer containing a yellow-forming coupler. Then all the silver bromide is exhausted except that corresponding to the positive image of the middle layer, which is then developed with a coupler forming a magenta dye. There are then in the film three positive images in the appropriate colors and the whole of the silver bromide converted into silver by the two development operations which each layer has undergone. The silver is removed from all three layers, the film is fixed, washed and dried.

"It is obvious that this Kodachrome process could be used to obtain color prints. If a Kodachrome transparency is laid down on a white paper support, it will appear much too dark to make a good print, but a transparency too light and transparent to be satisfactory for viewing by transmitted light can be cemented to a white paper support and the film base removed by solvents, which leaves the color image on the paper. It is also obvious that it should be possible to coat the three sensitive layers on an opaque base, such as paper, and to process them by the Kodachrome process to get a color print, but this is a far more formidable task than would appear. The mere duplicating of a Kodachrome is not very easy. It is difficult to avoid a loss of color-saturation and a shift in color. Moreover, the thin coatings on paper give new troubles of their own, and the paper base itself introduces very considerable difficulties.

"Some years ago, the Kodak Labora-

tories worked out a modification of the Fischer process in which the couplers in the emulsion layers were not dissolved in the gelatin layer itself, but were carried in very small particles of organic materials which would protect them from the gelatin and, at the same time protect the silver bromide from any interaction with the couplers When development takes place, the oxidation product of the developing agent dissolves in the organic material and there reacts with the couplers, so that the dyes are formed in the small particles dispersed through the layers This process might be known technically as the "protected coupler" process Its success depends on the choice of suitable materials for protecting the couplers and, of course, upon the choice of suitable coupling compounds for the dyes

"Within the last year this process has been reduced to a production basis, and a new film suitable for use in rollfilm cameras other than those already supplied with 35mm Kodachrome has been introduced The film is developed as a complementary negative from which prints on paper are made by the same process

"This process, then, differs very markedly from Kodachrome, though it is essentially of similar character The film is coated with the three necessary light-sensitive layers the red-sensitive layer nearest the base, then the green-sensitive layer, a filter-layer, and the blue-sensitive layer. In each of the emulsion layers are suspended particles of organic compounds insoluble in water, particles so small that they can be seen only under a high power microscope and containing the couplers required to produce the dye appropriate to each layer when they react with the oxidized developer.

"After exposure, the film is processed with a developer of which the oxidation product reacts with the three couplers, each in its own layer, and thus a dye-image is produced with the silver image in each layer After the silver has been removed, a negative is obtained composed of dyes, in which the image is not only negative as regards light and shade, but in which all the colors are complementary to those of the original subject. When such a negative is printed upon a paper coated with a similar set of emulsions containing protected couplers, a color print is obtained in which the colors of the original subject are reproduced.

"The prints are made by projection and are of the same width (2⅞ inches) regardless of the size of film used They are made on a special projection-printer adapted to enlarge the picture to a standard width and, at the same time, to maintain the proportions of the picture-shape used The printing is done on a continuous roll of paper, which is processed through a complicated machine, after which the prints are cut up and delivered."

Kodacolor film is considerably faster than the reversal-type Kodachrome

Kodacolor negatives are negative in color values as well as in black and white values Suppose the cowboy's shirt is yellow the girl's blouse red, and the sky blue in the negative the yellow shirt would be blue, the red blouse, blue green the sky yellow The cowboy's tan trousers would be greenish the face tones blue green The white horse would be black and heavy shadows clear celluloid

emulsions, being rated at Weston 20 or G-E 32, the base exposure for the proverbial "average subject" in bright sunlight is 1/50 second at f 8 to f 11 For the present, at least, but one type of Kodacolor emulsion is available — a "daylight" type This cannot be used with ordinary Photoflash or Photoflood globes, and the blue "daylight" photofloods and the bluish "Photoflood" filter used in making artificial-light exposures on Kodachrome film are also declared unsuitable Artificial-light Kodacolor exposures may, however, be made by using the No 21 B Mazda blue-bulb Photo flash lamps

Development and printing of Kodacolor pictures is being handled exclusively by the Eastman Kodak Company, for the present, at least, in the main plant in Rochester, New York Printing may be done at the same time the negatives are developed, on a blanket order by which all negatives suitable for printing are printed, or the developed negatives alone may be returned to the user, after which he may return for printing only such negatives as he selects As in Kodachrome and cine reversal film the purchase price ($1 35 to $2 40 per 6-exposure roll, depending upon size) includes the cost of negative processing; prints are priced at 40c each, regardless of size. The Eastman officials emphasize, however, that while Kodacolor developing and printing is being handled by the company, exposed films for developing and negatives for printing must not be sent in by the individual user direct, but only through a recognized dealer or photofinisher

The Kodak engineers and officials seem fully aware of the momentous changes in all types of photographic practice which the introduction of so revolutionary a system as this new Kodacolor process can initiate. They also realize a fact which the average practical picture maker—professional or amateur—does not always recognize that between the strictly technical perfection of such a process and its commercial utilization on a widespread and varied scale, a very great many practical and commercial problems must be surmounted. To quote Dr Mees again, "The development of inventions to the practical stage often involves far more work than the original inventions which made the development possible The methods used in the manufacture of Kodachrome were invented long before the film itself could be placed in the hands of the user, and the application of the process to the production of prints required much further work before those prints could be made with sufficient ease and certainty But, as each new step is taken, new possibilities come into sight and new progress can be made."

It is difficult to judge—especially under wartime conditions—what all of those possibilities may be in the case of Kodacolor For the present, color still photography has been successfully introduced to the one field of photography for which heretofore there has been no commercially practical color process available The demands of that field are already taxing the production capacities now available for film and processing That the scope and usefulness of this system will be expanded eventually, seems certain. As fast as commercial considerations and national conditions permit, it would seem as though we might well see this, or a similar negative positive color-system, extended to serve the more professional fields of still photography, to meet the increasing needs of 16mm commercial cinematography, and of course, ultimately 35mm. professional color cinematography. When those further developments may take place, none of us can tell, but it seems certain that with the introduction of simplified negative-positive color photography through Kodacolor, we stand at the opening chapter of one of the most significant developments in the hundred-year old history of photography END

Streamline Your Scenario With A Pictureized Script

By CARL FALLBERG

WE hate to drag out that old Chinese chestnut about, "One picture is worth ten thousand words," but it is particularly apropos here, and provides a swell opening gun in any argument concerning pictures vs words. It might also be said that the drawing-pen is mightier than the sword. In any case, no one can doubt the power of pictures, whether drawn or photographed, over words as a means of conveying a message, influencing opinion or explaining something.

In the issue at hand here, we are concerned with the usage of pictures to explain something. To be specific, the use of small thumbnail sketches to supplement a script, to indicate cuts, camera-angles and moves, and general action. However, before getting too deep into this discussion, it might be pointed out that the ideas and suggestions contained herein are directed primarily toward the amateur movie-maker, and are issuing from an amateur man who offers them not with shouts of "Eureka!", but humbly and earnestly, in the hope that some good might come of them.

Of course if any of our professional brethren wish to cast curious eyes in this direction to see what's going on in the world of the amateur motion picture creator, they're more than welcome to join in this cinema clambake.

The use of sketches and drawings to explain script action is nothing new in the professional ranks. Art-directors on the better pictures use them constantly. Directors like Gregory La Cava and John Huston plot out a great deal of the action of their scripts by means of sketches. Gordon Wiles, an ex-art director, used sketches to very good advantage in preparing and directing "Forced Landing," as he described some months ago in THE AMERICAN CINEMATOGRAPHER. Whenever a picture has gone through pre-production preparation of this sort, you'll generally find a better-looking film—one with greater pictorial value and consistency.

The value of this procedure is not only from an aesthetic sense, but also from the more practical standpoint of economy. The extra thought that goes into the planning of a script for production by means of sketches pays dividends by lessening the necessity for protection shots, retakes and added scenes.

This economical appeal of the sketch method should elicit response from the amateur, whose film budget is usually pretty limited. Making a scenario picture with amateur actors he's lucky if he can hold his shooting down to three times as much footage as will appear in the finished picture. And aside from uncertainty, the costs aren't exactly hay these days!

Of course, there are always those who shoot one take of a scene and let it go at that. Any conscientious care in script-planning is wasted on such shooting methods, just as a 35mm quickie production with an eight-day shooting schedule would hardly warrant the extra time and thought necessary to sketch up a script. The director generally reads the script through a couple of times, then throws it away and goes out and shoots. Emphasis is placed on speed, not quality of production.

There probably are isolated geniuses among amateur film-makers who can cut and edit their picture as they go along, relying on some fine, freak instinct to keep the film coherent. But they are exceptions, not rules. Better be safe than a genius, especially when you can't be sure that you really are one.

Since the amateur is usually his own writer, producer and director, he must necessarily be a jack-of-all-trades even to the extent of building sets and doubling in brass as a juicer, costume designer and script girl. All the more reason why, with all this stuff to keep on his mind, careful planning should enter into preparing his picture for production.

Our amateur movie-maker shouldn't be visualized as a lose-lipped dope who happens to own a movie outfit and who goes around shooting everything in sight just because he likes the little whirring sound in his camera. Just out of curiosity, let's see how Mr. Webster defines an amateur; ". . . one who has a taste for the arts especially the fine arts . . . who cultivates any art from taste or attachment, without pursuing it professionally!" Stick out your chests, boys. Doesn't say anything about "crude" or "unskilled," does it. So let's proceed on the basis of having a taste for the fine arts.

The script of your picture should be looked upon as a blueprint for the production, a chart, a guide-book to keep your wandering feet on the narrow path of cinema consistency. There is no reason why the script should not be given the same amount of care and thought in its planning that an architect gives his blueprints or a cartographer his maps. Motion pictures are no different from any other form of endeavor in the sense that the more careful the planning, the better the result.

This doesn't mean to tie yourself down absolutely ironclad to what's down on paper when shooting starts. A picture should be in a fairly flexible state of creation all during production—within limits. Even such a tangible article as a building is subject to a certain amount of compromise with new and better ideas that sprang up during construction. But

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16mm Sound Projection For Defense Film Shows

By ART LLOYD, A.S.C.

As individual amateurs and clubs all over the country volunteer to help the War Effort by showing 16mm Defense Films, the question of projection takes on a new importance. Even though they're on 16mm film, and possibly projected by amateur projectionists, these pictures have a man-sized job to do. They've an urgently important message to bring to their audiences, and any amateurishness in the way they're projected will weaken the effect of that message proportionately.

Most, if not all, of these Defense Films are going to be 16mm sound-films. And while most amateurs serious enough to volunteer for this sort of work may be presumed to be pretty good projectionists as far as silent 16mm and 8mm films are concerned, sound on-film is likely to be new territory to many of them who have never before had reason to operate a sound projector.

Luckily, operating a modern 16mm sound-film projector isn't half as intricate as it might seem on first inspection. Even though the sound part of the outfit may be new and unfamiliar, the picture part should be an old friend. The picture-projecting section of any 16mm sound film projector is almost always virtually identical with—or at least very similar to—the same manufacturer's more familiar silent projectors. It is threaded, operated and cared for in the same way you'd handle a silent projector.

The sound synchronized with any individual picture frame is printed on the edge of the film some 25 frames ahead of the picture. That is, below the picture-aperture when you're threading the machine. As far as the lower driving sprocket, the machine is usually threaded just as you would thread any silent projector. Then the film makes a fairly taut loop around the sound drum where the sound pick-up is made. From there it passes, in most designs, over a third driving-sprocket which isn't usually found in silent projectors, and from thence—often over various idling rollers—to the take-up reel.

Now one of the most important factors in getting good sound is making sure that the film moves really smoothly at the point where the sound pick-up is made. That's why in most designs the sound-scanning drum is either attached to a fairly heavy flywheel, or is heavy enough in itself to act as a flywheel. The drum is not driven by the projector's mechanism, but is revolved by the film passing over it, therefore it resists any uneven movement in the film, and tends to keep the film moving smoothly. For this reason, while the film's loop around the sound drum mustn't be such a tight fit it would tear the sprockets, it also shouldn't be too loose.

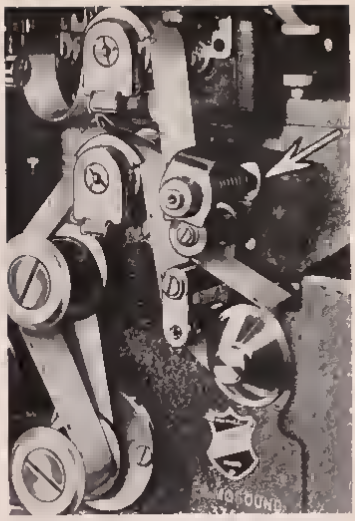
But this alone isn't always enough to iron out the minor irregularities of motion given to the film by the teeth of the driving sprockets above and below the sound-aperture as they engage and leave the perforations. For this reason, most designs provide some additional mechanism intended to smooth the film's travel to the last touch of perfection. Sometimes this mechanism may be rather intricate and hard to thread, like the somewhat perplexing system of rollers in the Eastman Sound Kodascope Special, through which the film must thread a snake-like path. Sometimes it is a comparatively simple system of idling rollers, like the "oscillatory stabilizer" on recent Bell & Howell Filmosounds, in which if the film-loop slacks up on one side of the sound-aperture the stabilizer oscillates and automatically tightens on the other side of the loop.

Most 16mm sound projectors have instructions—complete with a threading diagram—prominently printed inside their blimps or carrying cases. A few minutes spent reading these instructions, and studying the diagram before you try to thread the machine will save you plenty of trouble and maybe broken film during the show!

Most of the manufacturers, too, have simplified the wiring connections so that their machines can hardly be connected any way but the right one. In most 16mm sound projectors, you'll find that current has to be supplied to two separate places—the projector mechanism itself, and the sound system and its amplifier. In some designs, these two power feed cables are entirely separate. In others, like the Bell & Howell models, a special cable is used, which plugs into the power-supply outlet as a single line and at the other end divides into two lines, one for the projector and the other for the amplifier. Usually, it is unimportant which of these leads goes into which unit, as both are designed to operate on current of the same voltage and frequency. But be sure *both* lines are plugged in if you want to run sound!

In some projectors, the amplifier is built directly into the base or the blimp-case of the projector, and sound pick-up and amplifier are permanently connected. In other designs, the amplifier is a separate unit, and must be connected to the projector by a short cable.

In all projectors, naturally, the loudspeaker (or speakers) is separate from the projector and amplifier, as it has to be placed "down front" by the screen. There's a special cable for this, too, usually 50 feet or more in length.



Sound projectors differ from familiar silent ones only from the take-up driving sprocket down. Arrow points to stabilizer which smooths film motion over sound scanning drum. Beyond is sound driving sprocket from which film passes to take up reel.

In most designs, it is impossible to connect the sound wiring wrongly: the line from the projection-head to the amplifier is fitted with one type of terminals, and that from the amplifier to the speaker has a very different type. These are usually of the six-wire variety, and in both cases, they're designed so that they can only be plugged in the right way, so that the right wires connect to the right terminals. As in a radio tube mounting, one of the prongs is just slightly larger than the others, and won't fit into any connection except the proper one, which brings all the lines into their correct relationship.

Many of the larger 16mm sound-film outfits are equipped with amplifiers made to handle two projectors. In such equipments, you'll find a clearly-marked place to plug in projector No. 1, and a similar place to plug in Projector No. 2, and a switch on the amplifier's control-panel that permits changing over from one projector to the other without any break in the sound. Many of them have, too, suitable inputs and controls so that you can use the system's amplifier and speakers with a microphone, as a Public Address system, or with a phonograph turntable. In some, you can "mix" film-sound, discs and microphone.

The controls of a sound-film projector shouldn't be any mystery to anyone who has a modern radio. You'll find an "off-and-on" main switch, a volume control, and one—sometimes two—tone controls. Use them just as you'd use the corresponding controls on your radio. In some designs, you'll find the tone-control marked with indications such as 'voice" and "music." These obviously indicate

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Trials of Making A SCENARIO PRODUCTION

By FRANCES LEITCH

MAKING an amateur movie with one's friends for the actors often turns out to be a drama in itself. Due to limitations in properties as well as acting ability many interesting points arise. In our case, rehearsals, retakes, and the actual shooting proved tiresome to the participants, and the director had to use all his powers of diplomacy and persuasion to keep the bottom from falling out of the whole undertaking.

Friends who were ordinarily of a sweet and amiable disposition became waspish after a day on location. The leading lady felt that by bullying she could have retakes made of all the scenes where she did not show up to best advantage. Since she owned the camera and her husband operated it, she generally succeeded in having her way. The leading man was not exactly the tall, dark, handsome cowboy that the script called for, but since he owned three horses, a pair of chaps, and two six-shooters, he got the role. The value of these important properties could not be overlooked, for this was to be a western thriller; and we were depending upon the horses and the scenery to make up for the "ham" acting. We had a good, fast-moving story and we expected the expert riding, gun-play and authentic backgrounds to carry the picture through to success.

The second most important male role, of course, was that of the villain. The man with two horses got this part. We had to explain to him that in reality the success of the picture depended upon his convincing portrayal of the base seducer and plotter of dark deeds. He was to be killed in the end, shot from his horse at full gallop, and the execution of this maneuver required real equestrian skill.

We found it wise never to tell too much of the story to the members of the cast, but rather to explain each scene just as we were about to shoot it. Otherwise, those with unsympathetic roles became dissatisfied and wanted their villainy glamorized.

The minor characters could generally be counted on to perform their parts well and without much display of temperament. However, they were self-conscious and succumbed to ill-timed fits of laughter just as the camera started to grind. The director would soothe and flatter them into a state of self-confidence, clear the set of onlookers, and make a retake of the ruined scene.

Neighbors and friends are usually eager to have a hand in the making of a movie. We even found it advisable to manufacture a few minor roles not in the script to pass out to a friend who felt slighted, or to a neighbor on whose property we were trespassing.

One of the greatest difficulties in making a movie with one's friends as actors was to get them all together at one time in one spot. They were willing and enthusiastic for the first few occasions, but then their families started making demands on them: "Do you have to spend every Sunday making that picture? I should think you'd spend some time with your own wife for a change." On such a Sunday as this we would have to "shoot around" the leading man although we were definitely set to make his big rescue-scene that day!

We finally decided to give the leading man's wife a role in the movie in order to gain her cooperation. She was pleased at first and happy to be included, but she became a still greater problem now that she was on the set watching her husband in the final love-scene with the heroine. To keep peace among the players we struck the love-scene from the script and ended the picture on a purely platonic note. This proved to be a wise move, because love-scenes in an amateur picture generally turn pretty sour.

The leading actors became hard to handle as our picture progressed. The director unwittingly allowed them to see some of the rushes, and complimented them lavishly on their performance—an almost fatal mistake. The actors began to sense their importance; and the poor, distracted director had to apply all the pressure he could muster to force them into line again and make them obey his orders.

Of course, there was that ray of sunshine that entered when things looked blackest—the young Mexican boy who, with only a brief rehearsal, stepped into his part and played it with an ease and naturalness that gave reality to the whole picture.

Our movie was only half finished when the shooting was done, for then the ambitious cameraman-director had to sit down to the tedious and laborious task of editing the film. This meant cutting and splicing, condensing scenes to quicken action, adding transitional bits to make the action smoother, inserting titles, and finally paring the film to the bone—until there was noth-

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KNOW YOUR SHUTTER!

By RAY FERNSTROM, A.S.C.

WITH amateur groups pooling their equipment and resources for greater efficiency in turning out Civil Defense films, it is to be expected that from time to time the amateur Directors of Photography on these films are going to find themselves using unfamiliar cameras. Often enough, the best cameraman in an amateur group doesn't own the best camera, maybe his own is an eight instead of a sixteen, or maybe it isn't built to operate at the necessary 24-frames-per-second sound speed that's necessary for these films. So using a borrowed outfit is clearly indicated.

And brother, any time you start shooting something important with an unfamiliar camera, you're likely to be headed straight for trouble! Oh I know you've made yourself familiar with the external gadgets on the thing. You know how the lenses and their turret operate. You understand the speed control and realize the release-button is in an unfamiliar place. You know how to operate the backwind and fade (if any), and you're cinematographer enough to savvy that if the finder is in a different position from the finder on your own camera, you'll have to figure finder-parallax differently.

But there's one little gadget inside the camera I'll bet you've forgotten. If you have, it can cause you more concentrated grief and embarrassment than anything else on the camera!

It's the shutter.

Never gave it a thought, did you? Figured that all cameras had to have shutters to cut off the light while the film is moved from one frame to the next, and that since that's the case, all shutters must be alike?

Brother, that's just where you're most awfully wrong! The basic principles of all cine-camera shutters may be pretty much the same—but in detail, they can be plenty different. So can the results they give. If you don't respect these differences, they can change you from a first-class cinefilmer to a dub in the time it takes to shoot and process a single roll of film.

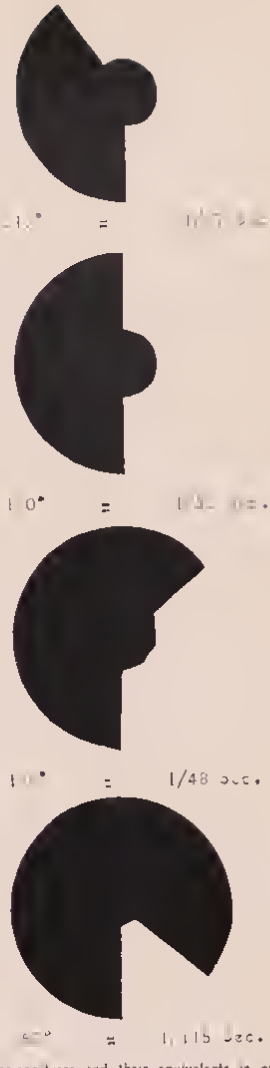
Let's see, now. The shutter on a movie camera has the job of blacking out the light that comes through the lens during the interval while the film is moved from one frame to the next, doesn't it? It has to be thin, so it can fit into the comparatively small space available between the film and the back of even a wide-angle lens. This means it must operate in a space maybe six or eight millimeters wide.

Obviously the simplest form of construction is a rotary shutter, that is, a disc of metal with a segment shaped like a piece of pie cut out of it, which revolves just in front of the film, and parallel to the film. Now, that open segment—which we call the shutter aperture—can be a comparatively thin slice nipped out of the disc, or it can be a fat slice.

If it's a comparatively thin segment, the shutter will naturally be open, exposing the film, for a relatively short period. If it's a fat slice, the shutter will be open longer, giving a longer exposure. And here's a point to remember: *not all cine-cameras—even those made by the same manufacturer—have the same shutter-opening.* Quite a number of different factors of design enter into this, but the fact remains that different cameras may very probably have different shutter-apertures.

Reduced to practical terms this means that under otherwise identical conditions two different 16mm cameras may give you considerably different exposures. Suppose, for example, you're accustomed to using a Bell & Howell Filmo 70 camera. This has a shutter-opening of 204°, and at 16-frame speed, gives an exposure of 1/28th second, at 24-frame sound speed, 1/45th second. Now say you change to an Eastman camera—any model, including the Cine-Special. These cameras have a shutter opening of only 170°, so you'll get an exposure of 1/32 second at 16-frame speed, and 1/51st second at sound speed.

Now, talking on a strictly silent-film basis, with everything shot at 16-frame speed, you'd probably find the exposure-difference between 1/28th second and 1/32 second within the latitude of black-and-white film processed (like Eastman's) with an automatic photocell-controlled machine which tends to equalize exposures. You'd probably find the difference troublesome in Kodachrome, with its narrower latitude, or in a monochrome shot where exposure was a critical factor. But when you add this to the problems incident in shifting from the 16-frame speed most amateurs use to the 24-frame speed any serious film such as a Defense Film has to be shot at, you find yourself going from an accustomed exposure of 1/28th second to 1/51st second—in other words, you very nearly cut your exposure in half. That's more than likely to turn what you intended to be a normal exposure into an underexposure, for it means if you take your meter reading as you usually would, get an *f* 8 reading, and set your lens accordingly, your shutter and camera-speed differences are actually giving you only an *f*/11 exposure!



Shutter apertures and their equivalents in exposure time at silent picture speed of 16 frames per second

This becomes even more complicated if you change from a Filmo 70 (or a Victor which, with its 205° shutter, gives virtually the same exposure) to a magazine-type Filmo Autoload or Automaster, which has a 135° shutter. In this case, you've got to allow for the change from 1/28th second to 1/45 second if both cameras are used at silent speed, or from 1/28th second to 1/65th second if the change is from one camera to the other and from silent-speed to sound-speed as well. (You might ask the Editor of this magazine what happened to him a few years ago when he shot a lot of color scenes with a borrowed camera of this type on an air trip for which his specially-rebuilt 70-C Filmo was too bulky, and forgot that little

(Continued on Page 132)

LET YOUR FAVORITE SONG SUGGEST YOUR NEXT SCENARIO

By F. C. MOULTRIE

WHETHER the reader of this article has participated in an amateur photoplay production before, or whether he may now be contemplating it for the first time, the writer would like to make a suggestion which he considers will be of value in providing an interesting source of material for preparing one's "shooting scripts." It is often a tiresome process to try and answer the question "What story shall we film?" and it is sometimes difficult to find a theme that will "fill the bill"—, particularly if one's film is to be comparatively short, that is, not much in excess of four hundred feet

Therefore, the suggestion is that you do not overlook the possibilities to be found in the immense fund of poems and songs. In many instances, choice of a song as one's basis also provides, quite automatically, the musical score with which to accompany presentation of the film In choosing a suitable song and having used one's best imaginative effort in writing the shooting script, this and other songs of similar theme may be used for scoring the musical accompaniment for the various parts of your film Furthermore, any one of these songs may again be written up as a photoplay if you wish, thus providing a series, all of a type

Songs usually possess some basic theme or story, which may be enlarged upon by exercising imagination, the resultant photoplay then becoming an elaborate movie "illustration" of the song in question

As an example of experimentation along this line and in order to present you with one such adaptation 'ready made," there appears hereunder a script which I wrote some years ago, founded on the song "The Old Oaken Bucket" Notations appear in the margin as to the recommended musical scoring for accompanying the presentation at the point noted and I might add that, although some costuming will be required for this particular script, this need be neither extensive nor too expensive It is pointed out, too, that this story would appear particularly well in full color, if well carried out Since it is almost entirely an outdoor setting, great fun and interest could be derived from undertaking its production during fine weather.

The writer would be exceedingly interested to hear, through the Editor, of any groups who may undertake to make this photoplay and of their subsequent results

THE OLD OAKEN BUCKET
ADAPTED (FROM THE WELL KNOWN SONG) BY
F C MOULTRIE

Suggested musical score — Old Oaken Bucket.

MAIN TITLE—
"THE OLD OAKEN BUCKET"
LAP DISSOLVE TO

Subtitle No 2 (Superimposed upon background of suitable design)
"How dear to this heart are the scenes of my Childhood,
When Fond Recollection presents them to view'
The Orchard, the meadow, the deep, tangled wildwood,
And every loved spot which my Infancy knew!"

DISSOLVE TO

Medium Shot No 1- Old couple seated by fireplace Old lady knitting. Old man has been reading. Sits thinking and removes specs from nose while fumbling for handkerchief. Blows nose, then wipes mist from specs. Wife looks up from knitting and enquires what he is thinking of With suitable gestures and expression he tells of his thoughts of bygone years

Music "When you and I were young, Maggie"

DISSOLVE TO

Subtitle No 3 (Superimposed on background of suitable design)
"The wide-spreading pond and the Mill that stood by it,
The Bridge and the Rock where the Cataract fell,
The Cot of my father and the Dairy-house nigh it,
And e'en the rude bucket that hung in the well!

Music "Old Mill Stream," "Oaken Bucket"

DISSOLVE TO

Medium Shot No 2, (Continuation of shot No. 1)- Old folks continue talking and then lapse into silent reminiscence as they slowly shake their heads from side to side.

Continuation previous music

FADE OUT AND INTO

Medium Shot No 3- Little red schoolhouse Children pour out of door Running towards camera One boy pauses, close-up panting, then continues forward and off

Music "School Days"

CUT TO

Medium Close Shot No 4 Little girl, on way home. Has school books, also has doll under one arm (If possible to arrange, truck alongside with camera part way.) Bully accosts little girl and tries to snatch away doll. Another little boy (one seen in previous close-up) arrives and rescues little girl, fighting and licking the bully. Politely escorts little girl off scene

Same tune

CUT TO

Medium Close Shot No 5- Arrival at little girl's gate She smilingly bids him good-bye and he politely doffs his hat He watches her disappear indoors and then heaves a "love-struck" sigh ere, with a pensive smile he slowly walks away-

Same tune.

FADE OUT

Medium Shot No 6 (Same as shot No 1) Old folks have reached foregoing point in their reminiscences and the old man, in a short glimpse lovingly looking at the old lady (as separate, short, close-up if thought best) Man smiles pensively and speaks—

Music "Old Oaken Bucket"

CUT TO

Subtitle No 3- "I remember ——"

FADE INTO

Medium Shot No. 7 Interior The old farm-house Mother, in old-fashioned dress and very matronly, sends our hero off to draw water She hands vessel to youngster and he departs

Same tune.

CUT TO

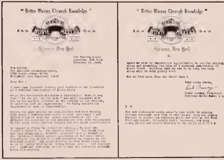
Medium Shot No 8: Outside farmhouse. Lad, closing door after him and making off to draw water
'Old Oaken Bucket."

CUT TO

Medium Shot No 9 The old well Circular low stone wall with winch en-

(Continued on Page 127)

AMONG THE MOVIE CLUBS


"Better Movies Through Knowledge"
SYRACUSE
8 m.m. MOVIE MAKERS 16 m.m.
ASSOCIATION
Syracuse, New York
February 16, 1942
The Editor
The American Cinematographer,
Hollywood (Los Angeles) Calif
Dear Sir :

"Better Movies Through Knowledge"
SYRACUSE
8 m.m. MOVIE MAKERS 16 m.m.
ASSOCIATION
Syracuse, New York
Very truly yours,

INTER CLUB COOPERATION The Syracuse Movie Makers Association was the first to respond to the suggestion, made here last month, of developing a National Association of Amateur Movie Clubs. Syracuse has films fellowship and full cooperation "on the line" at the start. How about it, the rest of you club officers?

Rockford to Hear Color Expert

Scheduled to highlight the March 31st meeting of the Rockford (Ill.) Movie Makers is a special talk on color photography by Eastman's ranking color-expert, Harris B Tuttle He will explain and demonstrate both still and movie photography in color, including Kodachrome, Minicolor prints and the new Kodacolor negative-positive color-still process All camera fans in the Rockford area are invited to attend this meeting, which, like all the Club's gatherings will be held at the Hotel Faust

ROBERT L. JACOBS

L. A. 8's See Professional Kodachrome

The February meeting of the Los Angeles 8mm Club featured a surprise showing of a reel of 16mm Kodachrome tests made by the Twentieth Century-Fox Studio in testing makeups, costumes and the like and selecting locations for professional productions Photographed by such outstanding professionals as Ernest Palmer, A.S.C., Charles Clarke, A.S.C. and Leon Shamroy, A.S.C., the reel showed glimpses of such stars as Carmen Miranda, Betty Grable, Tyrone Power, and Carol Landis, and revealed what 16mm Kodachrome can do in the hands of a skilled professional The reel was brought by Honorary Member Bill Stull, Editor of THE AMERICAN CINEMATOGRAPHER. The regular program included showings of a number of the entries from the Club's recent Annual Contest.

GERTRUDE MILLAR, Secretary

Minneapolis Previews 8's

Scheduled highlight for the February meeting of the Minneapolis Cine Club was a preview of the 8mm. films for the Club's forthcoming 8mm. show, completely titled, edited and ready for the Club's big public showing. Another highlight is the Cine Kiddie-Quiz, an informal quiz-program which has proven popular (not altogether on account of the prizes put up for correct answers to the questions!)

ROME A RIEBETH

Washington Sees Commandos

Britain's famed Commandos, as shown by the Castle 16mm war-newsreel release "British Commandos in Action," was the highlight of the February meeting of the Washington (D. C.) Society of Amateur Cinematographers. Editing and Editing equipment were discussed by Albert B. Hill, and a movie-quiz program was conducted by Theodore Sarchen Members were invited to bring their pet 35mm Kodachrome slides (limit, 10 per member) for screening. Special 16mm films were also to be shown.

JOHN T CHEDESTER, President

Outdoor Films for S. F.

The program arranged for the February meeting of the Cinema Club of San Francisco by Chairman Anthony Kleyn went "all-out" for outdoor epics Guest of the evening was F W Macondray, who was to show a 16mm Kodachrome sound-film "Campfire Girls" Secretary Lawrence Duggan volunteered to show two of his 8mm Kodachrome films with sound-on-disc accompaniment, "Virginia City Excursion" and "Snow Bunnies" Chairman Kleyn showed his 16mm Kodachrome film of the Livermore Rodeo The Technical part of the meeting included a general discussion of exposure

E L SARGEANT, President

Sound for Metropolitan

Scheduled for the February meeting of New York's Metropolitan Motion Picture Club was Ralph Eno's "New York World's Fair," filmed in Kodachrome and scored with recorded music "Telemark," a 400-foot monochrome film by Graham McKelvey of Easton, Pa., and a repeat performance of "Wolf Bait" completed the performance

J F. HOLLYWOOD

Utah Amateur Club

Feature of the February meeting of the Utah Amateur Movie Club (Salt Lake) was a showing of "Northwest Trails," by Dr S Kenneth Robbins. Plans are completed for the March meeting, at which the new season's officers will be installed, and winners of the Club's Annual Contest will be shown

TED GUERTS, Secretary

St. Paul Elects

February meeting of the St. Paul Amateur Movie Makers Club drafted the following to serve as officers for the coming year President, Howard L Hanson, Vice-President, Harold Smith; Secretary-Treasurer, Mrs. S. L. Johnson Programme Chairmen will be Messrs. Lucius and Finn, assisted by Kenneth Hezzlewood Scheduled screen fare included the film made of the Club by William S Yale, postponed from the January meeting due to a last-minute slip-up; and "Northern Vacation," Kodachromed in Northern Minnesota and Canada's Lake of the Woods area by D B Gustafson

Philly's Three Best Honored

At the February meeting of the Philadelphia Cinema Club selection was made by ballot of the three best movie films shown throughout the year From among the forty films shown during the season first prize was awarded to Boyd T. Barnard for his 16mm color picture "Sagebrush and Saddles" showing life at a dude ranch, and depicting the anguish of the first horseback ride, and the excitement of the rodeo.

(Continued on Page 127)

the scale between high-key scenes of polished luxury in the home and studio of the Hollywood director, to drably documentary scenes in the slums, where the hero goes on his search for trouble, sombrely effective scenes in the convict camp where he finally overtakes genuine affliction, and a comedy chase which is pure Mack Sennett

In doing this, John Seitz, A S C, gives a real virtuoso performance. The average audience won't be consciously aware of the photography, but camera and lighting very subtly play their part in establishing and maintaining the emotional conviction of the widely-divergent locales, lending fine atmospheric values to each. At the same time, he makes the players appear to the best possible advantage—no small task in some sequences, where Joel McCrea and Veronica Lake bespread themselves liberally with grime as they journey through hobo "jungles" and slums.

The film owes a great deal to the efforts of Farciot Edouart, A S C., and his staff for the excellent transparency projection process-work which makes the scenes on moving trains, and especially the close shots in the bus "chase" sequence so convincing.

Defense Film Ready

"AIR RAID WARDEN," the first 16 millimeter civilian defense training film produced on the Pacific Coast, will be released by Photo & Sound, Inc., San Francisco.

The film will be distributed nationally to civilian defense councils, air raid warden groups, industrial firms, city and county governments, and schools.

"AIR RAID WARDEN" is a sound film, running 10 minutes, showing the duties of the air raid warden in preparing his neighbors for action under possible air attack, and also shows his duties during a blackout.

Photo & Sound, Inc., San Francisco produced the film in cooperation with the Office of Information of the San Francisco Civilian Defense Council, City officials of Berkeley, Shell Oil Company, Pacific Gas & Electric Company and W. and J. Sloane.

Also under production in San Francisco is another 10-minute defense training film, "BLACKOUT" scheduled for release, March 1.

In addition to producing defense training films, Photo & Sound is handling distribution of all civilian defense films available.

16 MM | BUSINESS MOVIES

THE CASE HISTORY OF LUCY X

Propaganda film on work of Tuberculosis Associations; 800 feet Kodachrome, narrative sound.

Produced by **Capital Film Service.**

This picture tells a story in silent picture scenario form, supplemented by offstage narration, of a typical case from the films of a typical Tuberculosis Association. As such, it has an interesting message, and one which it brings home most effectively.

Technically, the film is excellent. The continuity is good — complete, though perhaps a bit slow-moving — and the medical aspects are well brought out without resorting to clinical scenes which might render the film unsuitable for general showing.

The major part of the action takes place in a sanitorium, necessitating a great deal of interior lighting. This is handled quite capably. As might be expected, some of the crucial action takes place during the night watches, and the effect-lightings of these sequences are dramatically excellent, though in one or two instances—as in the close shot of the two nurses in their office—the effect might have been better had the foreground shadows been lightened up a little. The long-shot of the doctor going down the long hospital corridor to the bedside of his patient is a particularly authentic night-effect lighting.

The uncredited cinematographer in charge of making this picture has also attempted something you don't often see in a commercial film—keying his lighting to the emotional mood of the action. During the early part of the picture, where the patient, "Lucy X," is seriously ill and desperate, he keeps his lighting in a low key, but as her recovery sets in, and she develops a will to get well, he raises his key to a more normally cheerful effect. In general it is well done, though in the higher keyed sequences his exposure seems a trifle on the full side, and in the low-key sequences it seems almost on the verge of underexposure. However, considering the limited latitude of Kodachrome, and the variables introduced by the duping process, he rates real praise for this attempt. His handling of the X-ray sequence is particularly good, by the way.

We felt that the definition of this film was not altogether the best, a flaw which could have occurred in the original photography, or in the duping process, as well. It would seem worthwhile for commercial Kodachrome filmers, wherever possible, to equip themselves with about 500 feet of heavy cable, so that they could make a clamp-connection at the main fuse-box, and draw safely enough current so that they could over-light their scenes sufficiently to permit photographing their interiors at comparatively small apertures, to get every possible advantage of depth and definition.

As regards the narration of this film —or of many another film of this general type—it somehow seems to us that we've never yet seen a commercial film-producer who got the maximum effect possible from offstage narrative. The narration of this film is excellent, of its kind—but we wonder if it is necessarily the best kind. Such films as "The River," "The Power and the Land," and more recently, "Bomber," have been extensively shown. And while it is a manifest impossibility for the 16mm commercial producer to get a Carl Sandburg narrative on the average 16mm. commercial budget, still, a careful study of these outstanding documentaries should give some worthwhile hints as to what can be added to a factual film by the properly dramatic use of words. After all, a film like "The Case History of Lucy X" is every bit as much a documentary as "Bomber;" so why should it be handicapped by a dry, pedantic narration, written without feeling and spoken in coldly factual tones, when the whole message of the picture is emotional?

FORWARD MARCH

Direct consumer sales-film; 400 feet black-and-white, narrative sound; picture and sound 35mm reduction.

Produced by **Caterpillar Tractor Company.**

Recording by Chicago Film Laboratory (RCA 35mm.)

We held this film over for several additional screenings in order that we might more carefully analyze its appeal and handling. It is an excellent picture, but one aimed not at the general audience, but at the highly specialized audience of men whose work is contracting on earth-moving construction jobs. Due to this highly specialized purpose, "Forward March" has been made one of the fastest-moving commercial films we've seen. From start to finish it hammers away at its motive—the speed and economy of Caterpillar equipment for big jobs of earth-moving. From the viewpoint of its intended audience, it tells its story excellently, but from the layman's viewpoint, it moves almost too swiftly. Things which to the contractor are matters of course, it sketches over briefly; yet the layman (including this reviewer) would have enjoyed seeing many of them explained in greater detail.

From the technical viewpoint, "Forward March" is excellent. Photographed obviously at innumerable different times and places, under a wide variety of conditions, it is technically very creditable. The scenes are nearly all technically excellent, though here and there a scene or two seemed to have been photographd at infinity focus when the salient action occurred at a considerably closer point. For its purpose, the use of black-and-white is probably adequate, but we'll admit we personally missed the greater authenticity color would give, especially in separating the equipment shown from its dusty background.

The recording (35mm. RCA) was good, but to our way of thinking, in no way superior to an equally competent job of direct-16mm. sound.

RAILROADIN'

General publicity film on railroad transportation; 1200 feet Kodachrome, narrative sound (35mm reduction RCA.) Dunningcolor Kodachrome print.

Produced by **Advertifilms**, Hollywood.

Sponsored by American Locomotive Co and General Electric Co

Attempting to cover in three reels the vast subject of the American Railroads' place in modern life, and at the same time play no favorites among the country's several-score Class A haulers is a large and thankless task Due to this, "Railroadin'" moves rather faster than it might, and skips swiftly over much interesting subject-material which could very well we shown in greater detail As a matter of fact, it contains enough material for two or three separate pictures.

Aside from this, the film does its work excellently. Technically, it is surprisingly good, especially when it is considered that the filming required only a few weeks, and includes shots on virtually every mainline railroad in the nation, with at least one shot of each of the nation's crack trains This required the cinematographers to work, often almost regardless of weather conditions, and to shoot according to train-schedules rather than for the best photographic conditions They've done an excellent job throughout.

The film is interesting in the way it combines strictly factual shots of trains and special railroad equipment with staged "human-interest" scenes. In some of these, Director Jack Boland has managed very skillfully to use the power of the camera to suggest as well as reveal

The recording is excellent. Originally a 35mm RCA variable-area recording, it was re-recorded to 35mm variable-density, and then printed by reduction to 16mm Kodachrome The color duping by Dunningcolor is also excellent, especially in view of the diverse conditions under which the original was perforce shot.

Movie Clubs

(Continued from Page 125)

Second prize went to Mr and Mrs Frank Hirst for their 8mm color film on "Glacier National Park." In addition to musical accompaniment Mr Hirst described and narrated on points of interest.

George Pitman, Vice-President of the Club received third award for his 16mm. color picture "Over Western Trails" accompanied by music and sound effects

In addition five honorable mentions were made of the following films shown throughout the year.

"Backyard Beauty," by Herbert L. Tindall; "Bar Harbor," by Walter Gray, "Pennsylvania Scenes," by Wm W Chambers; "Great Smokies," by Robert Crowther, "Flowers," by C Murray Booth

Miss Laura Lee, feature writer for the Philadelphia Evening Bulletin accompanied by a staff photographer attended this meeting and gave some very much appreciated publicity to the Club through a fine write-up To aid in giving color to the pictures which accompanied her story, members of the Club staged a scenario night-club scene

Refreshments were served to all attending the meeting

Long Beach Sees Defense Films

The February 4th meeting of the Long Beach Cinema Club was shown an 800-foot film of Kodachrome with sound, entitled "Shenandoah Valley National Park" and "Luray Caverns," through the courtesy of "Home Movies" There was also shown a traffic film through the courtesy of the Long Beach Traffic Safety Council February 18th, Miss Stewart from Los Angeles showed 400 feet of news reel features in sound including "Women in Defense"—"Safeguarding Military Defense"—"The Bombing of Pearl Harbor" and also one of her own pictures taken during a Canadian trip

Art Hoffman conducted the opening session of the "College of Movie Knowledge." A novel feature of a "Slogan a Month" was suggested by Clarence Aldrich. This month's prize slogan was won by Mrs Pat Smith—For credit edit—

If you want credit,
Take time to edit

PRUDENCE BRAKLOW, Secretary.

Scenario from Song

(Continued from Page 124)

closed by "roof" above, also with foliage suitably arranged above Boy approaches and sets down pail Proceeds to turn crank The 'Old Oaken Bucket" is hoisted up, full of clear water. Lad withdraws same and places on ground Pulls frog from pocket

Same tune.

CUT TO

Close-up Shot No. 10: Boy squats by bucket Drops frog in water and watches it swim Looks very preoccupied.

Same tune

CUT TO

Medium Shot No. 11: Interior Farm house Mother impatient for water. "Where IS that boy?" Goes to door and snatches it open crossly

CUT TO

Medium Shot No 12: Outside same door Mother glancing around seeking lad Spies him and peremptorily beckons and calls, Strides forward with determination.

Same, or other suitable music.

CUT

Shot No 13: Same scene as shot 9 Mother enters scene while boy still watching frog in bucket She shakes him and scolds Makes him empty bucket and draw clean water then melts, hugs and kisses him.

FADE OUT TO

Medium Shot No. 14: Same lad, with other boys, seen fishing where sign states "NO FISHING HERE." Wag of party jokes about it and, motioning to others to "wait a minute," he sets to work with a jack-knife to scrape off some of the lettering so that it reads "NO FISH IN HERE." They all laugh and continue to fish. Irate owner appears and warns boys off, and, pointing at sign without looking at it himself says—

Music "Old Mill Stream"

CUT TO

Subtitle No 4: "Can't you boys read?"

CUT TO

Medium Shot No. 15: Irate man sees sign, scratches head then looks at boys while good natured smile comes over his face and he slaps knee and laughs at the joke upon himself

Music "Old Mill Stream."

FADE OUT TO

Close-up Shot No 16 Circus announcement

Music: Suitable Calliope Circus Music

CUT TO

Medium Shot No 17: Same as above. Our "fishing trio" arrive. Scanning the circus announcements they indicate lack of entrance fees by pulling out pocket linings, after emptying varied assortments of bugs, string, etc

Music "Old Mill Stream," "Old Oaken Bucket."

CUT TO

Subtitle No 5 "Never mind, fellas,—snitch a look"

FADE OUT TO

Medium Shot No 18: Our friends seen on circus grounds beside walls of Big-Top. Stealthily glancing around, they crawl under Upheavals of the tent flap seem to indicate great enjoyment. (Or could be shown under or beside tiers of seats, showing cautious enjoyment.) Big circus hand comes along and hoists them out by their pants and sends them ruefully away

Calliope circus music suitable to type.

FADE OUT TO

Subtitle No 6: "Later"

FADE OUT TO

Medium Shot No. 19 Boy now grown to young man Walks up garden path with sweetheart, he in his best swallow tail coat and cravat with tall beaver hat and she in crinolines and bonnet

Music "When You and I Were Young, Maggie"

CUT TO

Medium Close-up Shot No. 20 The old well Apple blossoms above The lovers arrive and sit upon brim. He draws her a cool drink in the "Old Oaken Bucket." They play at drinking from it, one on either side.

Music "Old Oaken Bucket"

CUT TO

Closeup Shot No 21: Same scene Two seen as they look up from drinking and face each other, laughing over top of the old bucket.

Same tune, or "Daisy, Daisy" (or latter to follow)

FAST FADE OUT

Medium Shot No 22: Mother, now grown

older, outside farmhouse door, standing awaiting young couple. They arrive on scene and mother welcomes them. They all enter homestead together.

FADE OUT

Subtitle No. 7 "It seems but yesterday — "

FADE INTO

Music "Tell Me That You Love Me."

Closeup Shot No. 23. Angle shot of lovers silhouetted against suitable background.

Effects recording of tolling bell.

DISSOLVE INTO

Close Shot No. 24. Bell tolling in open church steeple.

DISSOLVE TO

Medium Shot No. 25. Horse and buggy decked out in ribbons. Fellows and girls in various wedding scenes. (This may be prolonged to take in various shots of bridesmaids, festivities, old fashioned wedding presents, couple leaving church, etc., as desired.)

Music. "Here Comes the Bride."

SLOWLY FADE OUT

Medium Shot No. 26. Back to shot 1. Old couple with tears in their eyes but lovers ever, still tenderly caressing.

Music. "Tell Me That you Love Me" or "Silver Threads Among the Gold."

DISSOLVE TO

Title No. 8. Old oaken bucket, against dark background, or evening clouds, with rope attached. Superimposed words appear, reading "The Old Oaken Bucket, the Iron-bound Bucket, the Moss-covered Bucket That Hung in the Well."

Music "Old Oaken Bucket."

SLOW FADE OUT

THE END

Academy Awards

(Continued from Page 103)

screen approximately twice the amount of light of previously used systems.

The fourth of these awards was given jointly to Paramount Pictures and 20th Century-Fox for the development and the first practical application to motion picture production of an automatic scene-slating device. The fifth of these citations was given jointly to Douglas Shearer, A.S.C., and the Metro-Goldwyn-Mayer Sound Department and to Loren Ryder and the Paramount Studio Sound Department for pioneering the development of fine-grain emulsions for variable density original sound-recording in studio production.

For the first time in Academy history documentary films were singled out for special recognition, a special citation being issued to "Churchill's Island," produced by the Canadian National Film Board and released in this country by United Artists.

Several Special Awards were made in addition to the usual ones. In addition to the citation given Rey Scott's "Ku Kan," already mentioned, such Special Awards were given to the British Ministry of Information for making 'Target For Tonight," to Walt Disney, William Garity, John N. A. Hawkins and RCA for their outstanding contributions to the advancement of the use of sound in motion pictures through the production of "Fantasia," and to Leopold Stokowski and his associates for their unique achievement in the creation of a new form of visualized music in Walt Disney's production "Fantasia."

The keynote of the entire banquet at which these Awards were tendered—the first such affair to be held in wartime—was serious appreciation of the vast and many-sided task the motion picture industry has to accomplish in modern war, maintaining morale along the "home front," providing instructional films to speed the training of the military services, and finally recording the actual operations of those forces in the field. It was evidenced in the remarks of virtually every speaker, including the report made by Lt. Col. Darryl Zanuck on the activities of the Research Council in making Army Training Films, the address of the evening by Wendell Willkie, the remarks of such other speakers as the Chinese Ambassador, Dr. Huh Shih, and the Canadian National Film Commissioner, John Grierson, and very liberal sprinkling of uniforms, worn not alone by official representatives of the U. S. Army, Navy and Marine Corps, but by members of the industry who have placed their specialized skills at the service of their country. The Academy Awards Banquet is traditionally the highlight of the film year; but this time it seemed to mark a new birth for the industry and its people—dedicating every effort to Victory. END.

Professional Sixteen

(Continued from Page 111)

early in the development of theatrical film production, it was not until 1923 that agreement was reached as to the size of film for a "substandard" film. In the middle "teens" Pathe brought out a 28mm. film and projector, and in 1922 Bell and Howell designed and built a 17½mm. camera and projector resembling the present-day 16mm. Filmo.

At that time, the Eastman Kodak Co. was designing a new camera and projector and was planning to announce a new reversal emulsion for amateur filming in 16mm. width. By mutual agreement, Bell and Howell altered the design of their 17½mm. camera to accommodate Eastman's new 16mm. film and in the spring of 1923 a new medium of film production was born.

An 11mm. film, a 9.5mm. film and finally an 8mm. film were also introduced and used. At one time a 70mm. double-width film was used in the so-called "Grandeur" system but none of the above sizes withstood the test of time in this country except 35mm., 16mm. and 8mm.

In the spring of 1923, things began to happen fast in the 16mm. field. First, Eastman Kodak announced their 16mm. reversal film, the Model A hand-cranked 16mm. camera and the corresponding Kodascope Model A projector. Then Victor announced a 16mm. camera at about 1/3 the price of Eastman's camera. The Victor camera was also hand cranked and although Eastman made a spring-drive and even a battery-powered electric drive as accessories to their Model A, Bell and Howell was the first company to make an "automatic" spring-driven 16mm. camera. It is a tribute to their original Filmo design to point out that the 35mm. Eyemo was designed according to Filmo principles and that no changes in basic design have been made in 19 years. It is true that Bell and Howell have modified the Filmo to make it more useful to the serious amateur and the professional by adding the three-lens turret, single-frame crank and back-wind, sync motor drive, 400-foot magazines, focusing on ground-glass, and improvements in their viewfinder, etc., but essentially the present day Filmo is very similar to the first model made in 1923.

In the years that followed, other manufacturers added improvements and introduced new models for special purposes such as the simplified magazine-type cameras. It remained for Eastman Kodak to design and manufacture the first commercially available 16mm. silent camera for advanced amateur and professional use. By coincidence, this camera was announced in May, 1933—just ten years after then introduction of 16mm. reversal film and the original Model A camera and projector.

At about this same time, Eric Berndt was making a custom-built single system Sound Camera which was the forerunner of the Berndt-Maurer Sound-Pro Camera. Although both Bell and Howell and the Mitchell Camera Co. have experimented with professional 16mm. cameras with many of the features of their 35mm. counterparts, the first and at present only thoroughly professional 16mm. camera was marketed by the Berndt-Maurer Corp. of New York. This organization was also responsible for introducing the first 16mm. sound recorder for double-system recording.

Thus, with professional camera and sound-recording equipment available, the tools for professional production in 16mm. were beginning to take shape. The first ten years of 16mm.'s brief existence might well be called the "Amateur" period in 16mm.'s development, but the beginning of the second decade saw 16mm. production taking on professional stature. Improvements in 16mm. production equipment and methods are still going on, so that it is not fantastic to hazard a guess that 16mm. may some day compete with 35mm. as a medium of production even for theatrical films.

16mm. film was originally introduced as an inexpensive film for amateur home movies. However when 8mm. films, cameras and projectors were made available in 1932, the cost of amateur filming was so greatly reduced by using 8mm.

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20th Century-Fox

For 20th Century-Fox

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AWARDS WINNERS
WITH PRIZE FILMS
BY

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FOURTEENTH ANNUAL AWARDS OF MERIT BY THE ACADEMY OF MOTION PICTURE ARTS AND SCIENCES

Defense Filming Roll-Call

We want to thank our readers—not only amateurs but 16mm. professionals as well—for their already generous response to the Defense Filming Roll Call as published last month. Replies have been coming in daily from all parts of the country. However the need still exists so we repeat the call for the benefit of those who have not yet sent their answer in. Since many readers write that they would like to mutilate their magazines we print this on a page where there is no editorial text on the reverse side and add that a letter containing the same information will also serve. We want especially to hear from owners of 16mm. sound-projectors as one important Defense Agency has informed us it is urgently in need of such equipment and aid.

A Camera Equipment

1 16mm?_____ 8mm?_____
2 Make and Model of Camera?_____
3 Camera speeds?_____
4 Lenses_____
5 Recording Equipment?_____ Film?_____ Disc?_____
6 Tripods_____ Meters_____
7 Lighting Equipment_____

B Projection Equipment

1 16mm?_____ 8mm?_____
2 Make and Model of Projector_____
3 Reel capacity_____ Lamp Wattage_____
4 Silent?_____ Sound?_____
5 Size and Type of Screen(s)_____

C Experience

1 Amateur?_____ 16mm Professional?_____
2 How long have you been making movies?_____
3 Have You Made any Sound Films?_____
4 Are you accustomed to interior lighting?_____
5 Can You Operate Sound Projectors?_____
6 How much film do you shoot per year?_____ B&W?_____ Color?
7 Do you specialize in any type of subject?_____
8 Have you made business commercial or educational pictures?_____
9 Individual or Club scenario productions?_____
10 Cine Club Membership? What Club?_____

D Personal Information

1 How much time could you give?_____
2 Could you give it on an unpaid volunteer basis?_____
3 Could you aid in making films?_____ Showing them?_____
4 Age?_____ Any Physical disabilities?_____
5 Are you subject to Military Service?_____
6 Married?_____ Single?_____

Signature_____
Street address_____
City_____ State_____

film that many amateurs changed over to 8mm. and many more new amateurs took to making "movie snapshots" in 8mm. The result of these changes has been that 8mm has become the popular "standard" of the amateur home-movie fan, while 16mm. has become the medium for advanced amateur and non-theatrical professional use.

From the beginning of 16mm projectors, it was considered desirable to make optical reduction prints on 16mm. positive film from 35mm. negatives. For several years, equipment has been available which gives excellent 16mm. optical reduction prints of both 35mm. picture-negatives and 35mm. sound-negatives. The user of 16mm. projection-equipment is not concerned with whether the positive he uses in his machine was printed by reduction from 35mm. originals or by contact from 16mm. originals, and so in discussing the uses of 16mm., we generally shall not distinguish between the two methods of arriving at a 16mm. print.

Amateur users of 16mm. film are confined largely to the photographing of vacations, family events and athletic contests with an occasional scenario film still somewhat an exception. Amateur use of 16mm. cameras in producing "school-made" films with crews of student technicians is becoming increasingly important in training students to assume responsibility and to coordinate their activities to a common purpose. Many theatrical and educational films are available in 16mm. for amateur projection in the home, churches and schools at a small rental.

Professional uses of 16mm. films are almost limitless in their variety of applications. Many travel lecturers illustrate their talks with 16mm. Kodachrome films of their travels. In some cases, these lecturers use 16mm. arc light projectors to show their films to large audiences of hundreds or even thousands of people who generally are not aware that the brilliant and colorful images they are seeing originated in a 16mm. film designed for amateur home movies in the living room.

Prominent physicians use 16mm. film to record unusual operations which might be of value in adding to the fund of medical knowledge. By making a film record of an operation, the details of surgical methods can be shown in extreme close-ups to large classes of students, perhaps years after the operation took place. Further details of the operation are frequently revealed in 16mm. color animations of action which cannot otherwise be seen.

College and University Athletic departments are making 16mm. film records of every play in their football games, usually in slow-motion up to 48 or 64 frames per second. Other sports are analyzed in a similar way by slow-motion 16mm. films. Physical skills are taught in 16mm. educational films using slow-motion for form analysis.

16mm. educational films are available as teaching aids for all levels of instruction from kindergarden through University in such widely diversified subjects as "Adventures of Bunny Rabbit"* for Kindergarden and primary children and "Work of the Stock Exchange"** for high-school and college study of Economics. These 16mm. educational films are not theatrical films which have had their run in theater-circuits, but are films which are made specifically for classroom use in instruction and generally are designed to fit into a "unit of instruction" at a particular grade level. They are custom built for the classroom and use all of the refinements of 35mm. theatrical film productions.

* Erpi Classroom Films Inc.
** Coronet Productions

Business and industry have been quick to realize the power of presenting their institutional sales messages, their direct selling campaigns and their sales organization programs by means of 16mm. sound films. Within their organizations, they have used the 16mm film to train personnel in more efficient and safer methods of production. Films have found extensive use in time and motion study for efficiency analysis, in training salesmen, in presenting a new sales policy to a dealer organization, to introduce new models and equipment to both dealers and the public.

With the advent of 16mm Kodachrome and Kodachrome duplicates and the possibility of enlarging the 16mm Kodachrome to 35mm. Technicolor, the business uses of color films are expanding rapidly. The 16mm sound-film in color is without doubt the most powerful medium available today to present a sales story, and many business organizations will make extensive use of color-films in the future.

The many branches of the Federal and State Governments have made extensive use of 16mm prints in "selling" the public on their functions and problems. Recently the armed forces have built their whole training program around the use of 16mm. prints of training films produced by Hollywood studios at cost and by the various units of the Army and Navy.

Within the past year the Hollywood studios have turned to 16mm. film as an economical means of making hairdress, wardrobe and make-up tests, screen and talent tests and scouting locations.

Some studios are already producing short-subjects on 16mm original Kodachrome and enlarging it to 35mm. Technicolor for theatrical release. Several Newsreel theaters have installed 16mm. Arc projectors and are running 16mm. films regularly. The quality of both picture and sound is such that few if any of the patrons even know that they are seeing a 16mm. film. Thus in many different fields of endeavor, 16mm film productions are taking their rightful place on a par with 35mm. productions and in the case of color films, 16mm. productions have a definite preference.

Wartime Economies

(Continued from Page 110)

tor will almost instinctively seize on such scenes as a means of increasing "production value," and all too often almost the entire restaurant is built. Yet in many cases, the really necessary action could be performed equally well by simply setting up a table before a pair of flats, with a few appropriate props in foreground and background to suggest the locale. In the majority of instances the dramatic values of the production would not in the least be harmed, and a tremendous saving of material, time, effort and money would result. If reverse-angles on such scenes were needed, what could be easier than to provide this by means of a process-screen on which would be projected a suitable stock-shot of a roomfull of people dining and dancing?

Another source of needless expense is the way screen writers will often use fairly important transitional dialogue and action as the characters walk down a hall, pass through an office or lobby, enter a car, etc., in a setting which does not otherwise figure in the story. While that dialogue and action may be important to the story, nine times out of ten it does not matter particularly in what setting it occurs. The cinematographer's instinctive reaction is to ask why, if the setting it not important, that dialogue can't be transferred to some other location, thereby eliminating the necessity of building a basically unnecessary set.

There are innumerable other potential economies of this nature which could and would be effected if the Director of Photography could be called into active consultation before script, sets and schedule had jelled into iron-clad rigidity. Do not imagine, however, that taking this type of short-cuts would damage the quality or production value of a picture. With the visualizing ability of a skilled cinematographer aiding actively in pre-production planning, such short-cuts as might be taken would be effected with a view toward the camera's great—and all too generally unutilized—power of suggestion. Often, as Gregg Toland, A.S.C., demonstrated repeatedly in "Citizen Kane," small and actually sketchy sets—planned accurately for the camera—can give an illusion of greater production value than can be conveyed by an actually large and costly set.

Finally, in considering the merits of this "pre-photographing" of scripts and production plans, remember that eliminating unnecessary sets, scenes and camera-moves from a script can have the effect of giving longer time for photographing the scenes actually used. Would not such a practice, then, be worthwhile if by camera-minded pre-production planning, it eliminated non-essential shooting and for a given schedule gave the production unit the equivalent of several more hours of effective work per working day? END

Know Your Shutter!

(Continued from Page 123)

matter of shutter-aperture differences. They say his face was a lovely Technicolor red when he saw his underexposed "rushes!")

Luckily, this question of shutter apertures can be turned to useful account, as well. For example, if you're going to be working under circumstances where getting enough exposure is a problem, you can get a little added advantage by switching from your 170°-shuttered camera to one with a wider opening like the Filmos or Victors already mentioned, or even one of the older 70-A or 70-C

Filmos which have a 216° shutter.

If you're using a camera like the Cine-Special, which has an adjustable shutter, you can make your shutter work for you very constructively, much as the professionals do with the adjustable shutters on their Mitchells. For example, you can "follow focus" on exposure with your shutter. Often, in making exteriors, we'll have to make a panning shot from action taking place in the shade out to action occurring in the bright sunlight. The difference in exposure may be a matter of several stops. One way to compensate for this is of course to close down your lens-opening as you pan from the shade into the sun, or open it, if you pan in the opposite direction. But this also changes your definition, depth of field, and contrast, so it isn't always so desirable.

But you can get exactly the same effect, so far as exposure is concerned, if instead of stopping down your lens as your light-value changes, you close down your shutter, instead. And doing it this way, optical quality, depth and contrast remain unchanged.

Another trick the professionals sometimes use is changing camera-speeds in the middle of a shot. For example, suppose we have a shot of some people getting into a car and driving off in a special hurry. We want the car to make a real jackrabbit start. But starting a car off like that isn't always so easy; besides, it's likely to burn a good deal of rubber off your tires, which is something to think about these days.

We can get the same result by shooting that part of the scene in which the actors get into the car at normal speed, and then, as the car starts, quickly dropping the camera's speed to half or two-thirds normal. Inevitably, this would make quite a difference in exposure. So we compensate it by cutting the shutter-aperture at the same time the camera-speed is reduced, keeping the exposure-timing the same throughout the shot. Professionals using electric motor-driven cameras have worked out some interesting mechanical gadgets by which motor-speed and shutter-opening may be changed simultaneously; but before Dwight Warren, A.S.C., doped out this gadget, they did it by hand—and so can you. Maybe you'll need an extra pair of hands or an assistant to help you do it, but you can do it surprisingly well just the same!

Another point where understanding of your shutter helps is in photographing fast-moving objects. If you're shooting some fast-moving object with a still-camera, and want to "stop" the motion so you get a sharp picture, you use a shorter exposure. The same thing works just as well with a movie-camera, for by cutting the shutter-opening, you give yourself a faster exposure. However, there are some peculiarities to this that are worth remembering. It's best to do this when your camera is "following" the moving object, rather than when the moving object is travelling across your frame laterally. You see, if your subject is moving and the camera isn't, cutting the shutter may sharpen up the individual frame-images of the moving object, but it will also space the exposures farther apart, so that there's greater displacement between that object's position in successive frames, with the result that you get a jerky, flickery effect on the screen. If, on the other hand, your camera is "following" the moving subject, shooting with a reduced shutter-aperture will give you a sharper image, since in the shorter exposure period even the fastest-moving parts will move less across the film during the shorter exposure.

All told, don't you think it's a pretty good idea to get acquainted with your shutter—especially if you're going to be making a Defense Film with somebody else's camera? END

Scenario Troubles

(Continued from Page 122)

ing left but what was absolutely necessary to the smooth continuity of the story.

Though the work was hard and the trials great, the achievement compensated for our efforts. With much good fortune we now had a picture not only pleasurable to ourselves, but entertain-

ing to the public at large The hard work and disappointment are forgotten when we view with pride the finished product. After a long rest we should like to try making another movie. END.

Sound Projection

(Continued from Page 121)

the settings at which voice and music reproduce to the best general effect: the "voice" setting means that the tone is set fairly high, with the bass suppressed, as that setting gives the highest intelligibility. The "music" setting usually means that the bass is accentuated, since most people prefer their recorded music with plenty of "oomph." If possible, it's a good idea to run all or part of your picture through beforehand, as a rehearsal, so you can find what settings give the best results from a given film on a given machine. Don't be afraid to change your tone-control setting during the show, using the high or "voice" setting for dialog or narrated sequences, and the "music" or low setting for sequences which are silent with only, or largely, musical accompaniment. You'd better rehearse for your volume setting, if possible, too, since it is very difficult to judge volume accurately when you're right on top of the projector. Try and gauge your volume for the middle of your auditorium. Remember, by the way, that you'll need a bit more volume when the auditorium is full than when it's empty, as people's bodies absorb quite a bit of sound. If you can't rehearse, keep the volume setting just a bit below the one that sounds best to you when you're close to the projector.

On some of the best 16mm. sound-film machines you'll find an additional setting on the sound-scanning optical system of the projector itself. Sometimes this is labelled "Fidelity." Sometimes it isn't labelled, but you can spot it as a little lever on the lens of the sound-scanner, or (as in the Eastman Sound Special) as a little sliding button nearby. This setting changes the focus of the sound-pickup beam, to compensate for the position of the emulsion, as it may be toward or away from the lens. This is very important if you want to get the best quality out of your sound; an out-of-focus sound-pickup will give poor-quality music, and makes voices sound "fuzzy." Try your film with the sound-focus in both positions, and you can very easily hear which gives the best results with that particular print.

Setting up the sound-projector doesn't differ materially from setting up for silent projection. The projector should be back of your audience if possible, and a bit above their heads. It should be on a pretty rigid foundation, too. The screen should be well centered with the projector, with its bottom edge at least four and a half feet from the floor. If you have any chance of suiting the size of your screen to the size of auditorium and audience, it's a good, general rule to try to have the screen large enough so that when you stand in the middle of the auditorium and hold your clenched fist in front of you at arm's length, the screen, as you look at it with one eye, seems not quite twice the width of the fist. In any event, don't try to use a screen larger than your projector will illuminate satisfactorily *with the particular film you're going to run.*

While it's generally handier to place your loudspeaker or loudspeakers on the floor beside the screen, you'll get the best results if you can place the speaker above the screen—over the heads of the audience—with the axis of the speaker's cone aimed downward at about the center of the auditorium.

Most serious amateurs have already learned the value of turning the projector's mechanism a turn or two by hand, to make sure the film is feeding through properly. This is doubly important with a sound-projector. It's a good idea, after you've done this, to flip the motor-switch on for a second, as well, to make sure everything's all right. Some machines, like the Sound Kodascope Special, have a little button you can press to do this. If your film is a reduction from a 35mm. original, it's quite likely to have the "Academy standard" leader on it, which gives you several feet of leader-film with which to make sure your projector is properly threaded.

In starting a silent projector, many amateurs make it a practice to flip the motor-switch first, and then turn on the projection-lamp. This is just as good an

idea in projecting sound. However, remember that your amplifier gets its results with tubes just like those in a radio, and these tubes usually take a minute or so to warm up. So be sure and switch on your amplifier several minutes before you're ready to start projecting. If you don't, your show will begin embarrassingly silent—and suddenly the sound will come booming out unexpectedly!

If you've had any experience projecting silent films before audiences, you've probably learned (from sad experience!) that it's always a good policy to come provided with a spare lamp bulb, just in case the one you're using burns out. This holds true for sound projection, too; in fact, if you're going to be giving Defense Film shows in strange auditoriums, it isn't a bad idea at all to come equipped with a variety of lamp-bulbs, so that you suit your illumination to the needs of the situation, using a low-powered globe in a small room, where you can get only a small picture, and a higher-powered globe—or even a "10-hour" one—where you've got to throw an extra-big picture or use a poorly surfaced screen.

In addition, don't forget the sound mechanism depends on several types of globes which can burn out, too. If you can, have some spare tubes. But at any event, supply yourself with a spare exciter-lamp. This is the tiny bulb which casts a little pencil of light across the sound-track and enables the photocell to pick up the sound. It is also one of the shortest-lived components of a sound projector. A spare exciter-lamp is a "must" if you're planning serious showings! A spare photocell is another useful thing to tuck away in your kit. You don't often need one—but when you do, well, your sound is dead until there's a "live" photocell in its place in the machine!

Finally, remember the points which make *any* show—silent or sound—more professional. Get your outfit set up, threaded, and completely ready to go *before* your audience arrives, if you can possibly do it. If you've more than one reel to show, use two projectors if possible, so you can change over in professional style, and keep the show going without a break. And always save your rewinding until after the show's completely over! END.

Pictureized Scripts

(Continued from Page 120)

the architect and contractor knew pretty well beforehand what the final result was to look like, and had this planned so thoroughly that whatever changes might pop up wouldn't affect the basic plan, but simply supplement what was already there.

Much can be said in favor of a picturized script; very little against it. About the only disadvantage to the method is the additional time and energy it requires. But since when did a little extra work hurt anyone?

Only too often a setup or angle on a scene is sluffed over when the script is being worked out because, "Oh, we'll work it out when we start to shoot!" Such off-the-cuff reasoning only leads to wasted film and time. Even though camera directions are indicated in the typewritten script, there's still the problem of character size, directions and angles to be considered. Deciding on these factors via the sketch method makes up your mind for you before that valuable film starts jerking through the camera.

But let's skip the theorizing for a moment, and get down to some examples. Illustrating this article are some thumbnail sketches lifted from the script of an amateur 16mm. western the writer and some friends made. In this case, a typewritten synopsis of the picture was developed at first, with suggestions for cutting. But instead of going ahead with shooting from this point, another step was taken and each scene-cut in the entire picture was sketched up, supplementing the typed script, in the manner illustrated. And there was the whole picture, already visualized before production. Every scene was there, with sizes of characters indicated, directions of character movements shown, and all camera moves plotted. Shooting then was just a matter of lining up the camera according to the diagramming of the picturized script, with allowances, naturally, for the "flexible state of creation" mentioned earlier.

No artistic ability is necessary to work out these little sketches. All you

need are those little matchstick figures that most anyone can scratch out, with circles for heads and simple ovals for bodies. If the character is a woman, slap a representation of a skirt on her. If it's a man, pants, naturally. The direction in which the character is looking can be shown without much difficulty by placing two dots for eyes on one side or the other of the circle head. The simpler, the better. After all, the sketches aren't for public consumption as works of art. They're for your own benefit. All you have to worry about is the size of characters in the field and the directions in which they move. Forget about the background; all that's needed is just what contacts a character, or a few perspective lines to indicate the camera angle.

Keep the sketches small, so you can cram a lot of them on a page of script. About 2 inches wide by 1½ inches high is a good rough proportion of the camera field. You might cut a stencil of the sketch size out of cardboard and use it to trace off the outlines of your sketches, just for the sake of size consistency, lining them up across the paper like a comic strip, allowing space underneath for scene descriptions and numbers.

Pan moves (where the camera follows a character), or the movements of characters in and out of scenes are simply shown by red arrows. If certain scenes in fairly close continuity utilize the same setup or background as a previous scene, they should be identified. For example, if scenes 67 and 69 use the same background setup as scene 62, it can be indicated by a small notation, s.a. (same as) 62 under the regular scene number. So, all three scenes can be shot on one setup without moving the camera. All this might sound like a lot is being made out of small details, but it all sums up to a more orderly and businesslike way to shoot a picture.

If there happens to be a little bit of the artist in you, a lot of fun can be had out of planning interesting compositions and "arty" camera-angles. If you're so inclined, you can even shade the sketches up an try working out lighting-effects. Mood stuff, you know.

Professional animated cartoons utilize the sketch method of production planning to the most complete degree of any part of the picture business. Drawings have been used to work up cartoon scripts ever since the days of Gertie the Dinosaur. Every scene-cut, camera move and bit of business is sketched up in careful detail, leaving nothing to the imagination or to be "worked out after the picture gets in production." Cartoon storymen have been trained to think pictorially, having found that the quickest, easiest and clearest way to present an idea is to do so graphically.

It seems to stand to reason that the most logical and natural way to prepare ideas for presentation in a visual medium like motion pictures should be by means of pictures. That long gap between the written ideas and their photographed form can be bridged by the proper use of explanatory sketches.

All in all, your picturized script will be a combination of sketches and word descriptions, with emphasis on the drawings. The system has been used successfully in enough outstanding cases to have proven itself. Time is saved, film is saved, and you'll get a better-looking picture. Besides, you'll probably learn something new about putting a picture together.

Which is a worthy enough reward in itself! END

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Miniatures

(Continued from Page 117)

glint of light from the metal may pick up in the camera. The best way of preventing this is to rub the wires thoroughly with ordinary painters' putty. This will take the sheen off the wire, dulling it down until it becomes photographically invisible.

Explosions, as of bombs, call for another specialized technique. In professional miniatures, our explosions—tiny charges of powder—are usually set off electrically, with the firing controls all wired to a convenient central switchboard, where a powder-man "plays" his explosions like an organist at his console. This elaborate firing-system isn't usually practical for amateur use, where only one or two miniature shots are necessary for a picture. However, in most cases the ordinary "giant" firecracker of Fourth-of-July commerce makes an excellent substitute. You can bury them in the ground of your miniature, or conceal them inside miniature buildings, and fire each "bomb" individually, stopping the camera between explosions while you prepare and light the fuse of the next charge. In this, as in any serious cinematography, a rigid tripod is absolutely mandatory, for your camera must not move a hair's breadth between these partial takes.

If you are going to have fires in your miniature, burning down miniature buildings, you can manage your miniature incendiarism quite easily. However, since you are burning your set behind you, you'll be well advised to do as the professional does in shooting a miniature fire or flood, or any other action in which his miniature set or props are inevitably destroyed, and shoot the action simultaneously with several cameras, from different angles and with different lenses, so that you get a variety of what the analytical Russians like to call "cutting pieces" at a single take. It's surprisingly good insurance, too!

Finally, since air raids and incendiary bombings are likely to be the subject of many of these films, here's a trick by which you can get a bomber's-eye-view of bombs actually falling on your own town. Begin by getting a *vertical* aerial still of your town. Get as large a print as you can—the bigger the better. Mount this flat on a board which you can move around on the ground. Mount the camera directly over it, pointing downward at your still. Slightly below the camera, and held rigidly in relation to it, construct a miniature of the bomb-bay of a plane, complete with bombs and bomb-racks. As you shoot down through this frame, move the photo slowly backward, so that you get the illusion on the screen that the camera is mounted in a plane in flight over the city. At appropriate intervals, operate your miniature bomb release, so that the tiny bombs (which should be built to quite a small scale) drop down and toward the picture. As the bomb gets well on its way, cut to one of your horizontal shots of a miniature bomb explosion, and the result on the screen—as any audience will swear—will be that one sees the bomb fall away from the plane, and then sees a closer shot of the resulting explosion! Let us all hope sincerely, though, that such shots may only be made with the safe-and-sane enactment of the movie miniature, and never in cruel actuality. END

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Tony Gaudio

(Continued from Page 112)

graphed years ago. If it's a good feature, I know how I brought it out before; if it's a bad feature, I know how I subdued it. I do something similar this time, and then maybe instead of having an uninteresting imitation Bette Davis, the industry has a new star with a personality in her own right."

Tony Gaudio has always been one of the most consistently progressive members of the camera profession. One of the very earliest members of the A.S.C., and the Society's fourth President, he has taken an active part in all of that organization's technical researches, such as those which smoothed the introduction of panchromatic film, Mazda lighting and modern make-up. And he has always found time to work out private ideas for the advancement of cinematography, as well.

One of those inventions is in daily use today any time anyone looks through the focusing microscope of a Mitchell camera, for Tony invented it. Twenty years ago, when you focused a professional camera you viewed your image either on the film itself or on a removable ground-glass focusing screen. In either event, if you had a good camera, you probably viewed this image through a simple, low-powered magnifying-glass, which still gave you an image which was upside-down and turned around left for right as well.

But Tony thought there ought to be a better way of lining up a shot. How much easier it would be, he felt, if you could see your image right side up and laterally correct, and also rather highly magnified! What's more, he felt that a system of lenses could be worked out which would do it. He kept after the idea, working in close collaboration with the Mitchell engineers and with the Bausch & Lomb opticians. Finally, after many months of experimentation, a fo-

cusing optical system of that type was actually perfected. For the first time in the history of cinematography, one could look into a camera and see—magnified some 10 diameters—the actual image cast by his lens, right-side-up and laterally correct. By a turn of a small control, the vital center-area of the image could be scanned, with the magnification almost doubled. Universally employed today, this system was a revolutionary refinement in cinematography when it was introduced.

Gaudio was also among the first cinematographers to experiment successfully with the idea of photographing exterior night-scenes in the daytime, with filters. In the face of an almost universal chorus of "it can't be done," he tried it on an important production—one of many he filmed with Norma Talmadge—and not only succeeded, but saved his producer some $25,000 over the cost of actual night shooting!

More recently, he has pioneered such modern techniques as the use of "Dinky Inkies," and "precision lighting," using spotlights almost to the exclusion of floodlighting units. He devised one of the most practical systems known for testing character make-ups. He was one of the first cinematographers to experiment with the use of fluorescent lamps for lighting close-ups.

One sometimes hears people both within and outside the industry wonder if men like Gaudio, who have been so many years at the peak of their profession, don't sometimes tend to get into a rut, since success has removed the incentive which spurred them on their upward climb. Tony Gaudio can answer that, in his own case, at least.

"Not so many years ago," he tells you, "Tony Gaudio was the big-shot cameraman. They gave him big pictures like "Hell's Angels." Then the word got around that Tony Gaudio's eyes had gone back on him—and right away, Tony Gaudio became an ex-big-shot cameraman. For two years, no one in Hollywood would give him a job. Then one day Johnny Arnold, out at MGM, gave him a picture, and right after that, Warner Brothers said they'd try him on one. And ever since then, every time I start a picture I have a little talk with myself. 'Tony,' I tell myself, 'in this business they say a man's no better than his last picture. You go in there and make this one the best picture Tony Gaudio ever photographed! You show them whether Tony Gaudio is good or not!' "

And Tony Gaudio has "showed them" with remarkable consistency. One of those pictures—"Anthony Adverse"—brought him an Academy Award for the year's best cinematography. Others—like "Juarez," "Robin Hood," and "The Letter,"—have year after year been nominees and strong contenders for the "Oscars" in both black-and-white and color. Even on program-picture assignments he invests a picture with an indefinable touch that makes one feel he's looking at something a bit better than any program film has any right to be. No matter what the assignment it isn't in Gaudio's make-up to "walk through" the photographing of a single scene.

Which is probably why, after nearly forty years of photography, and over a thousand pictures, the credit "Director of Photography, Tony Gaudio, A S C," is a pretty certain guarantee to any camera-minded moviegoer that what he's about to see will be photographically outstanding. END.

Scattered Light

(Continued from Page 109)

time, a further reduction is possible to—

$$K\ (t + s/2\ \sin^2 \phi)\ \text{units}$$

We may also simplify matters further by dividing through by Kt, and thus reach a point where the true image illumination is considered as unity, while the scattered light has a value of $s/2t\ \sin^2 \phi$ units of illumination.

In this last form, the expression will give the minimum illumination value in the shadows of our hypothetical subject, for in this case the true image illumination is so low that it may be neglected in comparison with the scattered light illumination, and the maximum tone ranges that the lens will transmit for different scatter factors and different semi-angles of lens field are readily calculated. It is clear that as the last factor (*i.e.* field angle) increases, scattered light flux in the focal plane will also rise. Even assuming, therefore, that the value of the factor s is reduced as far as possible by surface treatment of the glasses, it is still important to reduce the field angle so far as possible. In other words, a lens-hood which cuts out all the subject except those points which actually fall within the negative area in the focal plane is required.

The present writer has already dealt at some length (British Journal of Photography, 1941, pp. 427-8 and 434-6) with the contrast loss which is to be

expected for various levels of scattered-light illumination in the focal plane, and lest it be imagined that the above mathematical expression bears no relation whatever to practical photography, a description of one of the experiments involved is repeated here. A camera was set up before a large sheet of opal glass, and a step-wedge placed in the centre of the latter. The opal glass was illuminated evenly from the far side, and in order to imitate a variable field angle masks were placed over it which cut off all light other than that proceeding from circles of definite diameter. Identical exposures were made through four masks of different diameters, and a comparison exposure was made by removing the wedge from the opal, placing it in the dark-slide, and exposing on the plain background of constant brightness.

The resulting densities of the step-wedge image were plotted in the usual manner, giving the curves shown in fig. 2, and it will be seen at once that increase in mask diameter (which corresponds to an increase in field angle) results in an increase in scattered-light illumination in the focal plane. By interpolation on the contact-print curve, the maximum tone ranges which could be impressed on the emulsion for a given field angle were computed, and expressed as a percentage of the constant background brightness. The table below indicates the results.

Exposure No.	Semi-angle of lens field (ϕ).	Scattered light in focal plane as % of background brightness.	$s/2t \sin^2 \phi$ with $s/t = 4.4\%$
1.	9°	0.56%	0.58
2.	**14°**	**1.00%**	**1.28**
3	18½°	2.80%	2.18
4	24½°	4.25%	3.80

When the obvious difficulties of interpolating by the above method are taken into account, and when it is remembered that the area of the step-wedge on the opal glass has not been allowed for in the mathematics, the last two columns show a satisfactory agreement with one another. The scatter factor s/t was naturally chosen to bring the mathematical expression down to comparable values, yet the suggestion that 4.4% of the light transmitted by the lens is scattered is very much of the order one would expect to find.

It will be observed that the field covered by the lens even in exposure 4 is by no means a large one (just under 50° full field) and the low values used were chosen in order to avoid cut-off by the lens flange and mount, which would complicate the issue. Any further increase in field angle would undoubtedly increase the level of scattered-light illumination in the focal plane.

The application of these values will be realized when an ordinary landscape, which is more or less half sky and half foreground, is considered. Using a field angle of, say, 50°, we should expect that the level of scattered-light illumination in the focal plane would here be half that resulting for a uniform field in front of the camera with the same brightness value as the sky, so that from exposure No. 4 the minimum tone brightness in the foreground recordable would be something like 2% of the sky brightness. In such a case, the range of exposures given to the negative in the focal plane would hardly exceed 1-50, and even here (as a reference to fig. 2 will show) many of the lower tones would be so crowded together that differentiation between them would be out of the question. When it is remembered that these values presuppose the use of a lens-hood which cuts out all light other than that actually forming an image over the negative area, the effect of leaving off the lens-hood can be imagined.

The result of surface-treated glasses in the lens here would be to reduce the scatter factor, and thus cut down the level of scattered light illumination in the focal plane. A longer range of tones could consequently be recorded. Whether or not a reduction in camera exposure would be found possible (as has sometimes been suggested) depends on whether the increased lens transmission is, or is not, offset by the need for fuller exposure in order to accommodate the increased tone range projected on to the emulsion in the camera. This is not a matter which can be decided by a few trial shots, for until the subject contrast range has been carefully specified, it is not easy to find out just what effect the surface treatment has had on the negative image.

In this connection, a story used to be told of a Hollywood man who came over to England to make a film, and found his exteriors coming out much too dense

for his peace of mind On making exposure tests, he found that he actually required less exposure in English scenery, not because of an increase in the intensity of sunlight here, but on account of the moisture in the famous English Climate which flattened his shadows so much To get his usual contrast, development had to be pushed up. The position with surface-treated lenses is much the same if the same negative range is to be obtained, it may be found necessary to reduce the development of camera negatives, which in its own turn will result in a reduction in effective camera sensitivity.

The value of surface treatment is not bound up with increased camera sensitivity for a given stop number, but lies in the improvement in shadow-tone contrast which it may be expected to give. Camera tests with surface-treated lenses must thus be made under carefully specified conditions, and not merely by setting up a duplicate camera in front of an otherwise normal shot and set (To Be Continued)

Training Films

(Continued from Page 108)

most readily to an intelligent appraisal of the proceedings prior to their contact with the unit or article, and of what happens in the departments beyond their own. Out of this comes the "reason why" their own job is important, making them an important link in a well-planned series of events It is not hard to see that all can benefit from a plan that recognizes the dignity of man, for which we are fighting, and helps to dispel the condescension practiced by some employers.

How successfully the "reason why" is used to counteract the drudgery and monotony that is found in some of the assembly jobs necessary in modern mass-production methods, is illustrated by a training-film that was made in England. A short reel was made to show how to perform a certain task for which the nimble and more slender fingers of women were best suited. It was a fairly simple task, but one that required a certain knack; and it was performed on one of the numerous component parts of a large type of bomb.

But the part the girls got to work on didn't bear any resemblance to a bomb, and when they were through with their bit of work the parts were shipped off to another factory for completion. Anyway, there was very little evidence to prove to these girls that the tiresome work they did for long hours on monotonously similar pieces of metal had anything to do with the war

And these girls had a spirited interest in the war Their town had been badly blitzed But the output of their plant was way below what it should have been

Then somebody got a bright idea They added to this reel some footage of other training-films showing other stages in the manufacture of bombs. Then, with the cooperation of one of the British film companies they added footage showing British bombers taking off and an aerial shot of a stick of bombs dropping on its target from the belly of a plane.

But the triumph of the picture was the final scene which supposedly showed the result of the falling bombs. Lifted from a feature from the silent days this final scene showed a group of comically grotesque German soldiers emerging with their hands up from a still smoking shell-crater. And as the last German walked into the camera the sound-track played "There'll Always Be an England."

The picture was a success, the "reason why" the girls had to do such a job was adequately explained, and the part they played in avenging their homes and winning the war was convincingly conveyed in the grimly humorous finale. Add to that the nostalgia produced by the song, producing a determination to see that "there'll always be an England," and it is easy to believe the picture fulfilled its task successfully.

Anyway, production and output in that factory went up. Not only because it showed those particular workers how best to perform their allotted tasks, but because it gave those tasks a meaning —an important meaning. It did more than that even It gave those girls the thing that any team, or any nation working as a team, needs to win. It gave them what we used to call esprit de corps but which we now call morale. And it proved what we learned in the last war, and are proving again in this one—that either for entertainment or instruction, the motion picture is the greatest morale-builder the world has ever known **END.**

Defense Films

(Continued from Page 105)

to keep the scenes natural and not too fully lighted

Low-key lighting was, of course, planned at all times, yet not "low-key" lighting as is generally known in the industry, but rather "natural" lighting. Thus, if the principal source of light came through a port-hole, then that light was used although sometimes being reinforced with light outside the boat.

Classroom lighting presented a problem, as the ceilings were usually very low which prevented overhead and general lighting. The problem then became to conceal lights in out-of-the-way places, under tables, behind desks, columns, and ceiling-beams, but care was taken that each light would not present a source so strong that it would be noticeable, but rather just strong enough to kill a bad shadow and not be obtrusive.

Little experimentation was possible, due to lack of time. Snap judgment was the order of the day. Seldom were tests possible, especially in advance of shooting, nor were meter-readings always possible. It was necessary in most cases to judge the number of lights solely by experience, the distance away, and then go ahead and shoot.

All ordinary problems pale in comparison when shooting in the engine and boiler rooms of a ship actually in operation at sea. For the most part, such scenes embrace fast-moving machinery—black and uninspiring—and sometimes but a single camera-angle was possible because of lack of space. Choice of angles was partly overcome by the use of lenses of different focal lengths, wide-angle, medium shot and close-up scenes being secured by this method.

Another problem which was successfully overcome was the condensation of moisture on the lens surface. In working in boiler and engine room where the temperature is frequently 140°, steam and moisture tends to collect on the lens, fogging them to the point of opaqueness. This was overcome by the use of a small 6-volt fan with rubber blades which operated off the camera battery. The fan was played on the lens at a distance of from six inches to a foot—just out of range of vision—and I cannot speak too highly of this simple method of overcoming this handicap.

Practically every moving part of the engines, dynamos and other power-driven machinery also presented a problem by causing reflections or hot spots which kicked right back into the camera lens. These were for the most part overcome by the use of liquid wax, sprayed on the surfaces with an ordinary Flit-gun. Without this wax, and the fan, I doubt that the pictures could have been made at all.

We also used, with a great deal of success, red cellophane with the approximate density of 23-A filter, with which we covered windows, port-holes and other openings directly in the range of vision. This is particularly effective in classrooms, factories and similar locations where it is impossible to get camera-angles without including such openings directly in the picture with hot bright light outside and dim light inside. By the use of several different shades of cellophane from light yellow and amber to deep red, the exposure can very nearly be equalized.

Exteriors, of course, presented little difficulty in comparison, although we suffered the usual delays by having either too many clouds, or none at all. Of the two, no clouds at all present the worst difficulty. Nothing is so uninspiring as a perfectly blank sky for a background. Little can be done about it by any cameraman. Merely filtering out the sky does not solve the problem. Under such circumstances it is well to confine the photographic work to close-ups which do not show any sky at all, take your loss of time and wait for good photographic weather.

Our problem was further complicated by the fact that we had to picture the "Joseph Conrad" under full sail—men in the rigging—"Heave ho! m' lads" and what have you—for the "Conrad," that famous old sailing ship, was a real ship. When the wind was blowing, the boat from which we worked alongside (one of the 30-ft. Coast Guard dispatch boats) bobbed around so badly that the scenes taken from it were largely unusable, and when the sea was calm there was not enough wind to cause the sails on the "Conrad" to "belly out" such as is necessary to make good photographs.

Once when we were alongside in one of the small coast guard boats a real storm came up. There was the "Joseph Conrad" with all sails set, a painted ship on a painted sea, and the next moment the squall struck with all its fury! As she heeled over, bending to the force of the gale, and as her men swarmed into the rigging to get her canvas in before it was blown away, we cruised by her at full speed trying to get a few short scenes of this activity before the blanket of rain blotted out her outline completely. This we accomplished by speeding up the camera, prolonging for a few seconds a much shorter elapsed time, and although both

camera and crew were drenched to the skin and the lens had to be completely dehydrated, we did manage to get a few precious scenes. This stunt can only be duplicated, I think, with an Akeley camera, such as we were using at the time, and our success was the result of my experience in photographing hurricanes in Florida and the West Indies.

The procedure is as follows, and requires the intelligent and quick cooperation of an able assistant, which I had in Russell Anderson. Akeley lenses can be changed almost instantly. The focus and lens aperture must be pre-set. The widest angle available is used first; the next-shortest focal length, having been prepared in advance with aperture and focal distance set, is ready at hand in a suitable container, as are all of the other lenses.

During the height of the storm, as quickly as the first lens becomes wet with spray, the second lens is quickly exchanged, and then the next and the next, thus, each lens while dry secures more or less footage. Meanwhile, the camera is not stopped, and though the interval during the exchange of lens produces some blank film, it is not practical to start and stop the camera motor. This at best is a makeshift means to an end, but it does sometimes provide some startling scenes which cannot be easily secured otherwise under real conditions.

With the Akeley running 96 frames per second, which is top speed for the model I was using, a few good scenes were possible, and this high speed tended to slow down the violent pitching of the boat, keep the ship in frame longer, and permit each separate scene to register long enough to tell the story of the storm.

We joined the "American Seaman" for a trip to Cuba. Enroute we secured life-boat drills under off-shore conditions; shots of the trainees actually operating the vessel under the supervision of Coast Guard officers, below-deck scenes of engine room and boiler room, classes on and below deck, and a wonderful wealth of detail so necessary for the training sequences. In Havana we pictured "Jack Tar" ashore in a foreign port, and then we flew back to Miami and joined the S.S. "Mormacpen" at Charleston, S. C. All of these Moore-McCormack boats carry cadets who have graduated from the various schools.

The continuation of our work depended entirely upon the success of this first picture and our ability to keep within the budget and time limit of production, and from this small start the entire defense film effort has developed. For this reason I have dwelt at some length on our problems and methods. Notwithstanding the loss of ten days at the very beginning, the picture was completed exactly on the day specified and at a cost slightly less than that estimated. Some 25,000 feet of negative had been exposed in exactly 40 days.

Since the daily rushes had been so satisfactory and cutting and editing had kept pace with the camera work, it was decided to go ahead with plans for an additional picture before the first was ready for final screening. The original crew was transferred to Washington with orders to make a second picture, "Power for Defense," a story of the power resources in the Tennessee Valley. Since a shooting period of only 19 days was alloted to this picture, a "second unit" crew, headed by Floyd Crosby, A.S.C., was engaged to shoot some of the exteriors and air views. The "first unit" original crew, with slightly augumented lighting equipment, set out to shoot all the interiors.

My log-book shows that in 19 days we shot, in 9 cities or locations, the manufacture of 21 different products, all of which were essential to the armed forces. These activities included shelter-tents, the making of uniforms, thermometers, ammunition of various sizes, production of manganese and aluminum, the building of steam boilers and airplanes, in addition to all kinds of exterior shots showing plants and dams.

With this single exception, this one crew, consisting of four men in addition to a Director, has shot all the pictures to date.

With the firm intention that theatre management and the theatre public alike should have every confidence in the integrity of these films, the men behind this project were determined that not even the faintest hint of "propaganda" (that odious and much misunderstood description) should ever be applied to them. Great care in shooting and editing was taken to prevent any scene or sequence being misleading in any way. Actually, I feel that we "leaned over backwards" to prevent the slightest trace of "dramatics" from entering into the make-up of these films. What was wanted was cold-blooded and concise reporting and that's exactly what we got. But make no mistake, the men behind the defense films have created a new technique, a new method of making and putting films together, a method that might well be examined by all old-time producers and copied, and improved upon—if they can. And now that we are actually at war, the film program is of vastly greater importance and effort is daily being stepped up to meet the growing need for this type of film.

Big names and talent are putting a shoulder to the wheel. Two camera crews have been added. Carl Sandburg wrote the commentary for "Bomber." Mrs. Roosevelt wrote the commentary for "Women in Defense" and Katherine Hepburn narrated it. Orson Welles narrated the commentary for "Tanks." Garson Kanin is currently directing the next release "The Shield," and other big-name writers and stars will write and narrate future releases.

Yes indeed, from this first small beginning, our efforts are developing into a very important adjunct of National Defense and, I am proud to have played some small part in it. END

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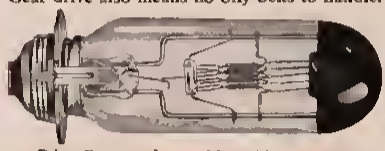

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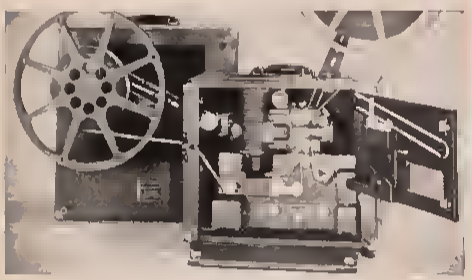

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